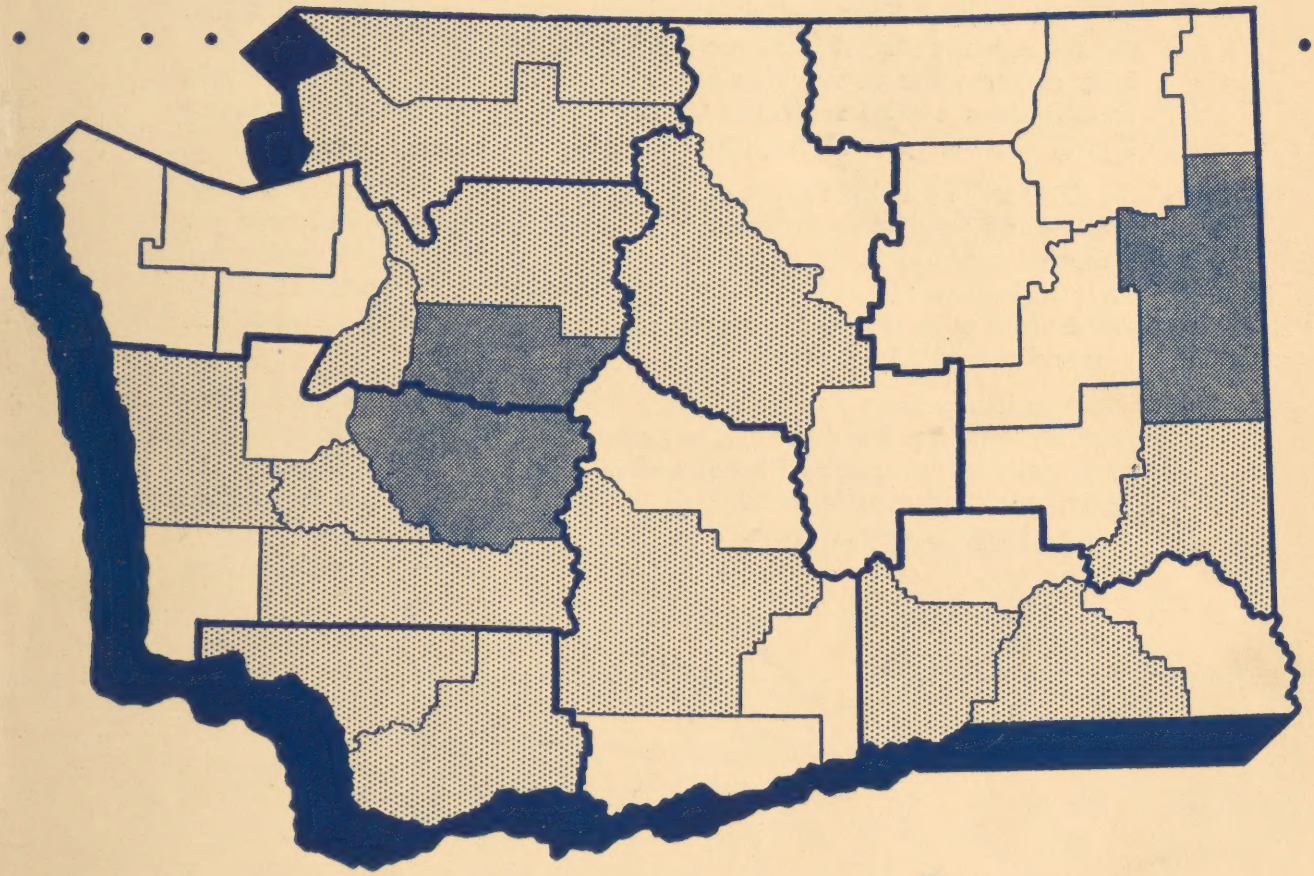
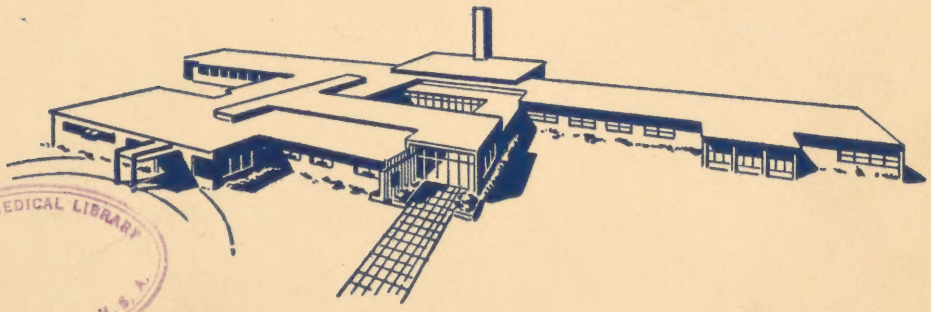
Washington State

HOSPITAL STUDY



a guide to expanding hospital service



WASHINGTON STATE DEPARTMENT OF HEALTH

Explanation of Cover Map

Service Areas For General Hospitals

This map is the key to Washington's State Plan for better general hospital service. Each of the 35 areas outlined is a logical unit which should be served by at least one hospital. These areas have been carefully drawn up from statistics concerning population, distances, roads, trading areas, wealth and other factors which indicate that the area is a logical unit for general hospital service.

You will note three types of areas. Base areas are the most heavily shaded and need at least four and one-half general hospital beds per thousand population. The 14 intermediate areas are shaded lightly and have an estimated need of at least four beds per thousand, and the 18 rural areas with the least shading are estimated to need not less than two and one-half beds per thousand.

The heavy lines divide the State into eight hospital regions. Each region should have at least one large hospital capable of taking care of practically all complicated cases and to which smaller hospitals in the region may refer patients requiring specialized care. The light lines delimit hospital service areas.

Washington State Hospital Study

This study is a report on the official State Plan as approved by the Surgeon General of the United States Public Health Service on September 13, 1947, and revised December 15, 1948. It presents the existing hospital situation throughout the State together with recommendations as to the relative needs for additional facilities.

STATE OF WASHINGTON
Arthur B. Langlie, Governor

WASHINGTON (STATE) DEPARTMENT OF HEALTH

J. A. Kahl, M.D., M.P.H.
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Planning and Development Section

Smith Tower, Seattle, Washington

1949

Foreword

The Hospital Survey and Construction Act (Public Law 725 of the Seventy-ninth Congress), which was passed unanimously by both Houses of Congress and supported by the American Hospital Association, American Medical Association and lay organizations, brought a great stimulus to hospital planning in the United States. This law provides federal financial assistance for survey, planning, and construction of hospitals. The Washington State Plan is presented in accordance with the requirements of the law, the rules and regulations of the Surgeon General, and the instructions received from the United States Public Health Service. This Plan recommends the construction of facilities which when built will, together with existing hospitals, provide the basis for the development of a coordinated hospital system with an interrelated network of hospitals in the several urban and rural areas of the State. Such a system of hospitals would serve as the nucleus to insure that on a permanent basis every citizen may receive the maximum benefit from all that medical science has to offer. More than two and one-half years were spent in the completion of the survey, preparation of the Plan, and approval of the first construction project. The survey and planning work has made available a wealth of information for the use of those interested in hospital development.

Much credit is due to the Washington State Hospital Advisory Council representing medical, hospital and lay organizations which worked very closely with the State Department of Health throughout the survey and planning period. This group not only gave freely of its time and knowledge, but also assisted in the development of the plan and concurred in the conclusions set forth in this report.

The members of the Executive Committee of the Council are: Burton A. Brown, M.D., past President, Washington State Hospital Association; Mr. Ralph W. Neill, Executive Secretary, Washington State Medical Association; C. W. Knudson, M.D., practicing physician and member, Washington State Medical Association; Mr. L. R. Durkee, Federal Works Agency; Mr. George Wellington Stoddard, Architect; John W. Unis, M.D., State Department of Public Welfare; and Miss Katherine Hoffman, R.N., Washington State Nurses' Association.

Special credit is due to the Staff of the Hospital Planning and Development Section and others who have assisted in the preparation of this material. Mr. Harry C. Windell of the State Department of Public Welfare completed the nursing home survey schedules and assisted in the analysis of data pertaining to the chronically ill. Cedric Northrop, M.D., Head of the Tuberculosis Control Section of the State Health Department, assisted with the preparation of the portion of the State Plan pertaining to tuberculosis hospitals. John A. Kahl, M.D., Head of the Division of Local Health Services, provided basic information for the public health centers plan. Members of the staff of the University of Washington and Washington State College have cooperated with the Health Department in certain phases of the study. Arthur L. Ringle, M.D., C.P.H., former Director of the State Department of Health, has been ex-officio chairman of the Advisory Council throughout the development of the State Plan and the inception of the construction program.

Introduction

In anticipation of passage of the national Hospital Survey and Construction Act the Washington State Legislature passed the Washington State Hospital Survey Act. This law provides that "The Director of the Washington State Department of Health is . . . authorized and directed to conduct and make a survey of the location, size and character of all existing public and private . . . hospitals and health centers (to) supply the necessary physical facilities for furnishing adequate hospital, clinic and similar services to all the people of the state; and (to) compile such data and conclusions, together with a statement of the additional facilities necessary, in conjunction with existing structures, to supply such services." Proceeding under this authorization, the inventory phase of the Survey was started in August, 1945, and was finished approximately a year later. The schedules were mailed to each hospital, and soon thereafter the Survey Director was employed and work begun on the laborious task of securing accurate, comparable, detailed information from all the hospitals and related institutions. All hospitals in the State were visited one or more times by field workers, and where necessary additional information was secured by correspondence or telephone. The "Hospital Survey Schedule of Information" prepared by the Commission on Hospital Care served as the vehicle to collect the data used as the basis for the analysis of existing facilities. This Commission, which developed the Schedule for use on a nation-wide scale, was a non-political, public service group created cooperatively by the American Hospital Association, the U. S. Public Health Service and private agencies to assist the states in the technical phases of the hospital survey work.

While the information was being gathered from the hospitals the Hospital Planning and Development Section began bringing together the necessary social and economic information which could be used to serve as a guide in determining where additional hospitals might be needed. Some of the factors studied which are not presented in detail in this report include the distribution of population by age groups; the spread of population between urban and rural people; the population density and the concentration of population in urban centers; birth and death rates, deaths by cause and age groups; the per cent of births and deaths occurring in hospitals; retail sales per capita; effective buying income and employment status of the population; and assessed value per capita of real and personal property.

A study was also begun on the development of hospital service here in the State of Washington. Some of the historical comparisons made include: The growth of the population in relation to the number of hospital beds, the distribution of general hospitals and hospital beds by size of communities and the tuberculosis beds per annual tuberculosis death.

In addition to that contained herein, our study of existing hospital facilities has included preliminary analysis of the hospitals by size, type and age; a breakdown of patient services available for adults, children and newborn; personal and physical facilities available; and costs and investments in hospitals. In all, the Hospital Planning and Development Section has prepared in preliminary form dozens of statistical tables, maps and charts depicting economic, social, hospital and medical conditions relating to the need for hospitals in the State of Washington. The analyses of this hospital data and related statistical information together with knowledge and experience of the State Health Department have served as the basis for the State Hospital Plan. The statistical material, much too voluminous to present herein, is on file with the State Health Department and will if possible be published subsequently as separate research reports.

The scope of this report is limited to the official State Hospital Plan as outlined by Public Law 725 and the Rules and Regulations of the Surgeon General of the U. S. Public Health Service. The format is in a large part suggested by the instructions contained in the Grants-in-Aid Manual issued by the Public Health Service as with other programs utilizing Federal funds.

The State Department of Health does not seek to promote any specific plan or integrated system of hospital regions and areas. Rather it is hoped that the plan herein set forth will serve as a guide and stimulus to encourage the various hospitals to band together for greater efficiency and better service.

This publication is intended to explain the operation of the Hospital Survey and Construction Program and serve as a reference for physicians, hospital administrators, public health workers and others concerned with hospital planning in the State of Washington.

Table of Contents

List of Tables

List of Appendix Tables

List of Figures

Summary

The Washington State Plan for expansion of hospital facilities as recommended by the State Hospital Advisory Council on August 15, 1947, was first approved by the Surgeon General of the United States Public Health Service on September 11, 1947. The approval of the Plan and subsequent revisions makes available to the State of Washington approximately $500,000 per year for five years to aid in the construction of such public and other nonprofit hospitals as are shown to be needed.

The Plan outlines the estimated need for five types of facilities: general, tuberculosis, mental, and chronic disease hospitals and public health centers (housing for local health departments). The standards by which the need for additional facilities in each category is measured are established by law as follows: general hospital beds at four and one-half per thousand population, tuberculosis hospital beds at the rate of two and one-half times the average annual deaths from tuberculosis, mental beds not to exceed five per thousand population, two beds per thousand population for chronic disease patients, and not to exceed one health center per 30,000 population. The population base utilized is the July, 1947, estimate as certified by the Department of Commerce.

The estimated need for general hospital beds was distributed throughout the State among base, intermediate and rural areas so as to provide comprehensive and adequate types of hospital service to all communities. The area delineation of the State and the minimum standards for each type of area is presented on the cover.

In counting the existing facilities in order to determine the number of additional beds needed only those hospitals meeting a minimum standard were included. The physical plants were judged in terms of the standards as set forth in the Uniform Pacific Building Code and the General Standards of Construction and Equipment as established by the United States Public Health Service.

On the basis of these standards for acceptable construction and an estimation of the need for new facilities, the hospital situation in the State was found to be as follows:

Type of Service	*Beds In Use*①	*Acceptable Beds*②	*Nonacceptable Beds*②	*Total Beds Needed*③	*Additional Beds Needed*④
General Hospital	8,937	7,891	532	10,210	2,319
Tuberculosis Hospital	1,604	2,126	268	1,466	177
Chronic Disease Hospital	2,671	1,392	1,279	4,390	2,998
Mental Hospital	7,455	6,065	736	10,975	4,910

① "Beds in Use" are those being used for each type of service regardless of the overall classification of the institution and include those in excess of normal capacity. These beds in excess of capacity have been excluded when determining the count of "Acceptable" and "Nonacceptable Beds."

② "Acceptable" and "Nonacceptable" bed counts include bed space now available but not in use. Acceptable beds also include those available in excess of the established needs.

③ "Total Beds Needed" are determined from the respective State ratios for each type of service.

④ "Additional Beds Needed" is the number necessary to increase the acceptable facilities to the total approved for all areas.

In those instances where existing acceptable beds are not all strategically located there may be a need for more facilities in certain areas even though the area or State total of acceptable beds exceeds the total need indicated.

The plan for tuberculosis hospitals is based on the division of the State into five areas involving the best compromise possible between the existing functional pattern and an ideal area delineation.

Mental hospitals are planned on a statewide basis with five per cent of the total bed needs recommended for units in hospitals other than the three State institutions.

Planning for the chronically ill is closely related to that for general hospitals since ready access to adequate surgical and treatment facilities is imperative during periods of acute illness. For this reason the State has been divided into ten areas, each of which contains two or more general hospital service areas.

A study of the full-time local health departments revealed that the 39 counties fit into 22 public health areas, each of which has sufficient population, adequate transportation, and yet is not so large but that it could comprise a logical unit for public health administration. At present there are five acceptable centers and three more under construction. In addition there now are 13 acceptable auxiliary facilities. The Plan calls for 12 additional health centers and 41 additional auxiliary facilities.

A study of the medical and nursing personnel available to staff both existing and proposed facilities indicates that in 1947 there were about 8,015 registered nurses in the State or one nurse for each 274 persons. Recent studies indicate that only about two-thirds of these nurses are actually engaged in nursing and that about half are employed in the institutional field.

Of the 2,408 licensed physicians in the State in 1947, only 1,647 were in active practice of which some 282 were over 65 years of age. This is an average of 1,333 persons per physician in active practice.

In accordance with specific criteria, priorities have been established for the construction of each type of hospital. Preference must go to the low income rural areas in the greatest need of satisfactory facilities. Priorities were established in accordance with the percentage of need met, adjusted on the basis of wealth, hospital usage, isolation, and special area problems.

The priorities thus established determine which request for assistance shall receive first priority. Each year a construction schedule is prepared including as many high priority projects which meet the requirements as may be included with the limited funds available.

All projects must be in conformance with the minimum standards for construction as well as for maintenance and operation of the completed facility. Care must be given without discrimination on account of race, creed, or color.

The State Department of Health will be glad to furnish those wishing to receive assistance with information as to the procedural requirements.

Chapter 1. General Hospitals

In considering the availability and need for hospital facilities the attention of the public immediately turns to the community general hospital. It is here where the injured or seriously ill are treated; and it is here mothers are rushed for aid in childbirth. The average person relies upon this facility to meet his need and little realizes the services provided by tuberculosis, mental, and chronic disease hospitals. This chapter is devoted to the general hospital, and special facilities are discussed in subsequent chapters.

Definition and Classification of General Hospitals and General Hospital Beds

This study is limited to those general hospitals providing a community service and hence excludes naval, military, veterans, Indian, and institutional hospitals. For purposes of enumerating existing facilities a general hospital has been defined as: Any institution providing overnight (in-patient) medical, surgical, and nursing care for the sick or injured providing it has (a) five or more in-patient beds, (b) facilities for major or minor surgery, (c) laboratory and X-ray service, (d) sterilization facilities, (e) one or more registered nurses on its staff, and (f) one physician in regular attendance. In some cases, even though the required service or facility is not maintained within the hospital building, the institution has been classified as a hospital if some continuing arrangement exists whereby such service is provided. For example, it may be that laboratory or X-ray service is provided in an adjoining laboratory or clinic, and yet the patients receive as complete hospital care as if these services were provided by the hospital itself.

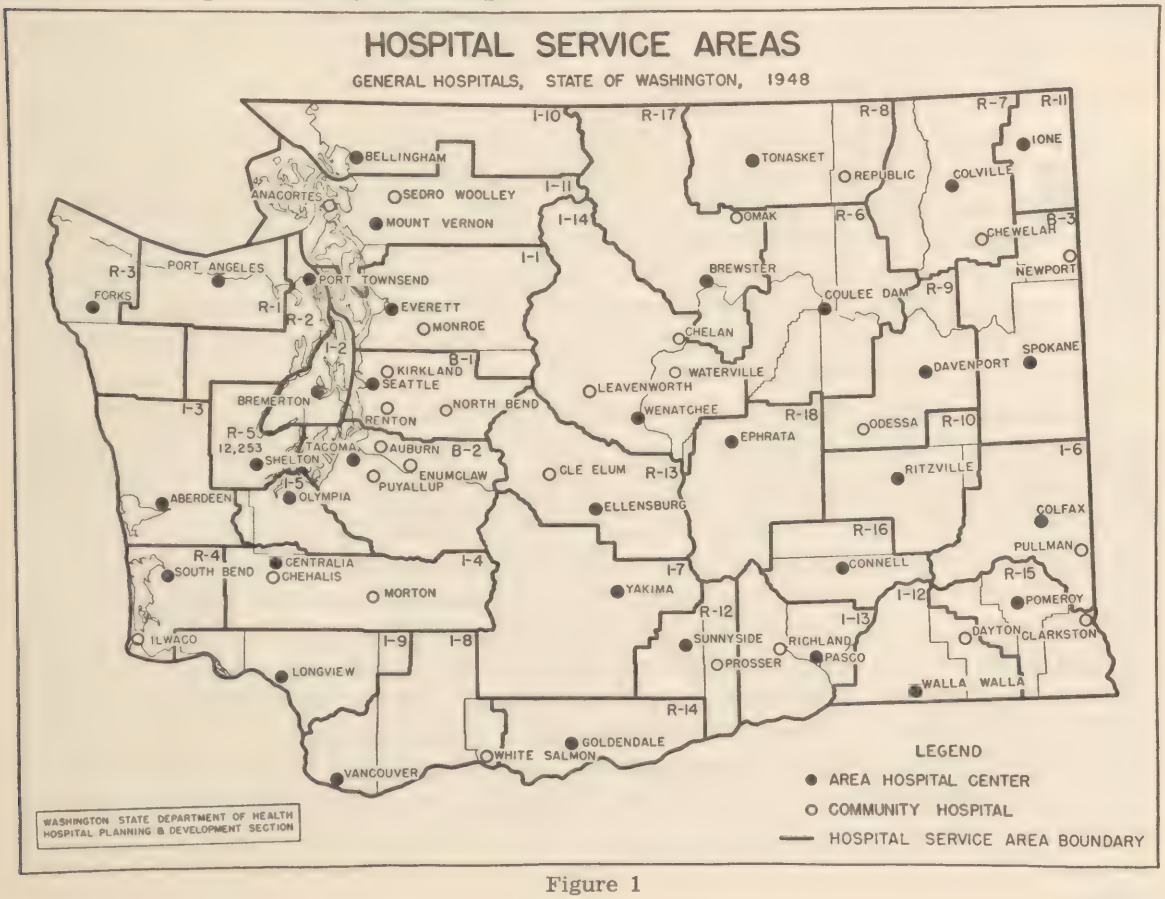


Figure 1

In the determination of need it was necessary to follow very closely the pattern established by the U. S. Public Health Service. In so doing, among the several factors which become of prime importance are the following: Area delineation and classification, the functioning of a coordinated hospital system and regionalization, and the minimum area requirements established by the U. S. Public Health Service.

Basic Requirements in the Determination of Need for General Hospitals

(a) Area Delineation: As portrayed on the cover and explained in detail in Chapter II, the determination of service areas is the first step in estimating the need for general hospitals. Once the area is defined the problem is reduced to measurement of the needs of the people served by hospitals therein. This may include a certain portion of those from the more rural areas who need specialized care. The location of existing acceptable and proposed area center and community hospitals is shown on Figure 1.

(b) Area Classification and Enumeration: In accordance with federal standards the areas delineated were classified into base, intermediate, and rural areas. A *base area* must contain a teaching hospital of a medical school or have a total population of at least 100,000 and contain, on completion of the hospital construction program under the State Plan, at least one general hospital which has a complement of 200 or more beds for general use. This hospital must furnish internships and residencies in two or more specialties. An *intermediate area* is any area so designated by the State Agency which has a total population of at least 25,000 and contains, or will contain on completion of the hospital construction program under the State Plan, at least one general hospital which has a complement of 100 or more beds. *Rural areas* are any so designated constituting a logical unit no part of which has been included in a base or intermediate area.

As presented on the cover, in the State of Washington it was found that there are three areas of sufficient size with adequate potentiality for maintaining one or more large hospitals to be designated as base areas. The Seattle Area will have a teaching hospital and a medical school to serve the entire State. In addition this area should provide special services for those portions of the State to the north and west. Tacoma is planned as a base area to assist the hospitals in southwestern Washington. The Spokane Area has been designated as a base area for the integration of hospital service in eastern Washington and northern Idaho.

In accordance with requirements established for an intermediate area, 14 areas throughout the State have been so designated. The remaining 18 areas have insufficient population or insufficient existing or proposed hospital facilities to qualify as intermediate areas and therefore have been designated as rural areas.

(c) A Coordinate Hospital System: The federal regulations in Section 53.1 (e) define a coordinated hospital system as: "An interrelated network of general hospitals throughout a state in which one or more base hospitals provide district hospitals, and the latter in turn provide rural and other small hospitals with such services relative to diagnosis, treatment, medical research and teaching as cannot be provided by the smaller hospitals individually." Regional integration of hospital service ideally would result in a referral of patients and interchange of special services between hospital centers much as indicated by the connection lines in Figure 2.

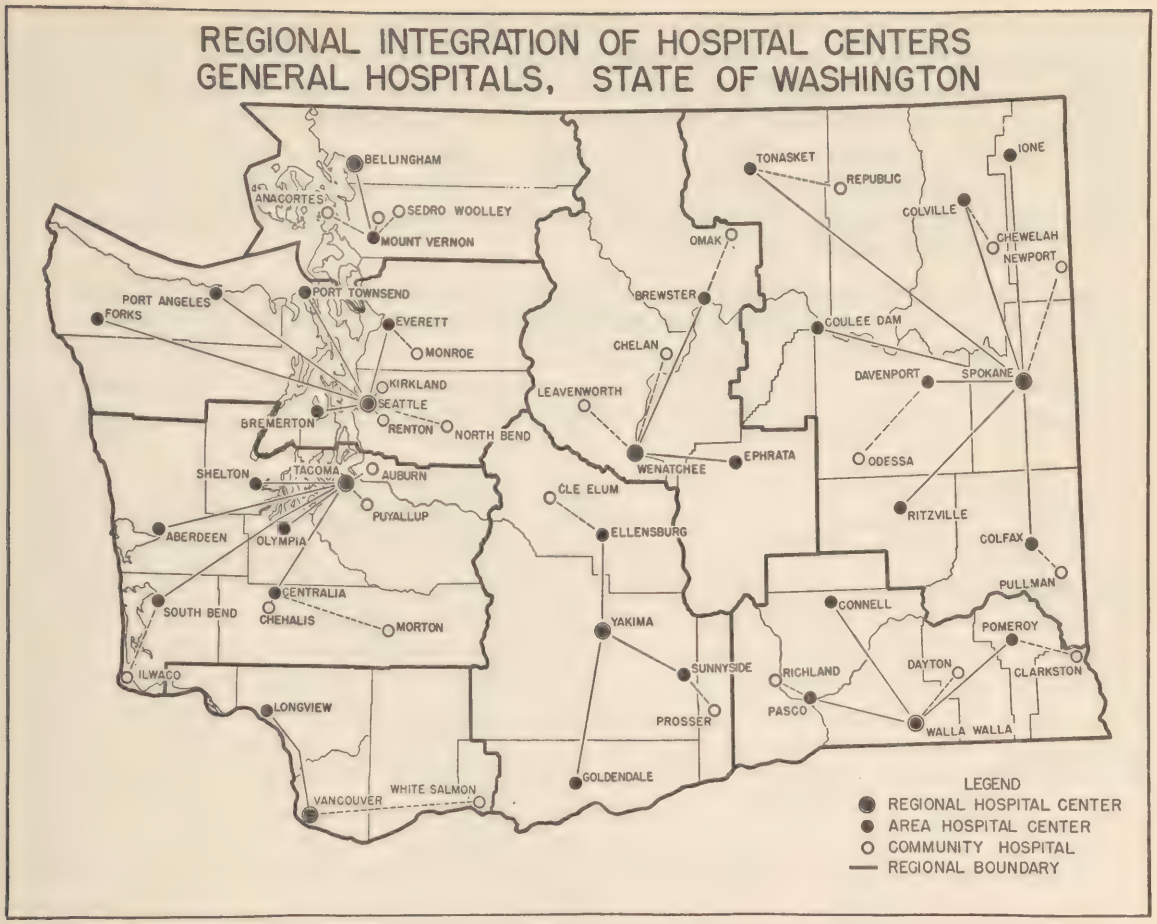


Figure 2

Coordination is necessary in order that the hospitals can best serve the public in the fight against sickness and injury. Base Areas including the large metropolitan centers must be depended upon to have available the ultimate in modern medical facilities and trained technicians. Hospitals in other regional centers would be equipped for all but the most complicated services. The district or regional hospitals would refer patients to the base areas for complex diagnosis and treatment and in turn receive assistance from physicians and technicians in the district center and patients referred from hospitals and clinics in the rural areas. The community clinics, most isolated of the rural hospital facilities, would provide only a few beds for obstetrical and emergency cases, and such additional facilities as a small laboratory and portable X-ray with consultation rooms and possibly offices for the local doctors. The regional center might train interns and nurses but would probably rely on the base hospital with university connections for the graduate and post-graduate training of doctors and nurses.

Were hospital services thus coordinated, hospital operating costs would be reduced by avoiding duplication of equipment and services, medical and technical personnel could maintain professional contacts and yet bring special services to rural communities. In some instances it might even be found feasible for the rural community clinic to be a functional part of a larger hospital in a nearby community.

(d) Delineation of Hospital Regions: In accordance with the concept of an integrated hospital system, the areas of the State have been grouped into eight regions

as shown in Table 1 and Figure 2. Detailed consideration was given to trade patterns and probable lines of interrelationships. Each region includes that portion of the State which might logically go to the regional center in an integrated hospital system. At least one base or intermediate area is included in each region. In this way each region will have at least one hospital of 100 beds or more. Hospitals which function as regional centers would need more beds than the population of the immediate area would indicate. The number of additional beds would depend on the area from which patients might be referred.

Table 1.—POPULATION OF REGIONS AND SERVICE AREAS FOR GENERAL HOSPITALS, STATE OF WASHINGTON, 1947①

Regions	*Regional Population*	*Hospital Service Areas*	*Area Population②*
I. Seattle	865,449	B-1 Seattle	643,982
		I-1 Everett	102,481
		I-2 Bremerton	85,729
		R-1 Port Angeles	19,050
		R-2 Port Townsend	9,189
		R-3 Forks	5,018
II. Tacoma	432,717	B-2 Tacoma	262,598
		I-3 Aberdeen-Hoquiam	54,479
		I-4 Centralia-Chehalis	46,258
		I-5 Olympia	40,816
		R-4 Raymond-South Bend	16,313
		R-5 Shelton	12,253
III. Spokane	307,283	B-3 Spokane	216,961
		I-6 Colfax	30,151
		R-6 Coulee Dam	12,725
		R-7 Colville	17,156
		R-8 Tonasket-Republic	11,270
		R-9 Davenport	9,001
		R-10 Ritzville-Sprague	7,052
		R-11 Ione	2,967
IV. Yakima	158,653	I-7 Yakima	102,387
		R-12 Sunnyside-Prosser	24,022
		R-13 Ellensburg	24,469
		R-14 Goldendale	7,775
V. Vancouver	139,829	I-8 Vancouver	82,197
		I-9 Longview-Kelso	57,632
VI. Bellingham-Mount Vernon	124,200	I-10 Bellingham	65,250
		I-11 Mount Vernon	58,950
VII. Walla Walla	95,004	I-12 Walla Walla	37,352
		I-13 Pasco-Kennewick	39,862
		R-15 Pomeroy	14,797
		R-16 Connell	2,993
VIII. Wenatchee	71,865	I-14 Wenatchee	46,936
		R-17 Brewster-Okanogan	16,663
		R-18 Ephrata	8,266
ALL REGIONS	2,195,000	ALL AREAS	2,195,000

① Regions are numbered in order of decreasing population. Base, intermediate, and rural areas are each numbered consecutively beginning with those included in Region I.

② Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports, as of July 1, 1947," Series P-25, No. 4, Bureau of the Census, Department of Commerce.

(e) Minimum Requirements: The Federal regulations require that the Plan be so designed that the State will have an average of 4.5 beds per thousand. On the basis of the latest official census, therefore, a total of 9,877 general hospital beds would be needed for the State of Washington. In determining the needs by areas the Plan must provide that base areas have at least 4.5 beds per thousand population, intermediate areas 4.0 beds per thousand population, and rural areas 2.5 beds per thousand population. The population of each area and region is presented in Table 1.

Further Criteria in the Estimation of the Need for General Hospitals.

Population, as indicated above, is of necessity of prime importance. As further guides to determining the need in each area the following factors were given special consideration: (1) The per cent occupancy of beds now available. (2) The "bed-death ratio." And (3) The Statewide average usage of hospitals per person per year.

(1) In estimating the need for more beds, the per cent occupancy of existing facilities is perhaps the best available criterion. By per cent occupancy is meant the average number of beds occupied by patients in relation to the total number of beds in the hospital. Such a measure is, however, limited to those areas where reasonably adequate facilities are now available. The usage will not be representative in the areas which are adjacent to other areas seriously deficient in hospital beds. If an area is adjacent to one lacking a large percentage of the necessary facilities, this lack of sufficient nearby facilities may result in a usage in excess of the normal needs within the area. Conversely the nearness to hospitals in adjacent areas with excess beds or special facilities will reduce occupancy. Also if the quality of existing hospitals is so poor as to discourage their use by many doctors and patients, or if the overcrowding is so great as to restrict admission of patients needing hospitalization, the level of use of existing facilities will not accurately reflect the need by the extent these conditions exist.

The number of physicians available to practice in the hospital and their specialties greatly influence usage of available facilities. Variations in hospital usage for a given population may also result from the training or habits of the physicians. Some physicians care for more of the patients at home than do others. Physicians hospitalize patients longer or shorter periods of time for similar cases. The utilization of existing facilities is presented in Appendix Table 5.

Among the many other factors affecting usage are the age composition of the population, predominant occupational activitie , wealth, climate, and adequacy of transportation.

(2) The second method of estimation is based on the bed-death ratio. This formula, expressing the relation between deaths and hospital usage, has been developed after extensive research by the Commission on Hospital Care and others. It has been determined that, other factors being equal, there is a more or less constant ratio between the number of deaths occurring in an area and the number of hospital beds which will be used. Such a concept assumes not only that for every hospital patient who died a given number of days' care will have been provided these and other patients, but also that a uniform per cent of all deaths occur in hospitals.

In the State of Washington it was found that slightly less than one-half of all deaths occurred in hospitals. In most cases the area variation from the State average was less than 15 per cent for all areas where sufficient data was available. Our analysis of local conditions was carried still further and it was found that the average number of patient days of care provided per death occurring in representative hospitals was 260.8. See Appendix Table 8.

In using this criteria as a means of estimating the need it was assumed that one-half the deaths would occur in hospitals and uniformly so in all areas. It was furthermore assumed that beds would be utilized on the basis of the State average number of patient days per death. While admitting that the State averages are only an approximation of area rates, it was not found possible to analyze the multitude of factors causing the variations among areas. The resulting estimate of occupied beds needed, while far from perfect, is one of the few measurable estimates obtainable.

(3) The third method of measuring the need for general hospital beds which is subject to statistical analysis from available data is that obtained from the *average hospital usage per person per year* in the State. The best data available shows that

Table 2.—GENERAL HOSPITAL FACILITIES BY HOSPITAL SERVICE AREAS, STATE OF WASHINGTON, 1948

Hospital Service Areas	*Number of Hospitals*[2]	*Beds In Use*	*Normal Capacity*[2]	*Acceptable Beds*[2]
B-1 Seattle	22	2,682	2,376	2,349
B-2 Tacoma	10	912[1]	921	921
B-3 Spokane	7	957[1]	961	961
I-1 Everett	5	303	271	242
I-2 Bremerton	2	251	227	227
I-3 Aberdeen-Hoquiam	3	237	225	200
I-4 Chehalis-Centralia	3	101	83	61
I-5 Olympia	1	134	114	114
I-6 Pullman-Colfax	3	201	179	179
I-7 Yakima	4	376[1]	505	488
I-8 Vancouver	5	674	537	520
I-9 Longview-Kelso	2	153	143	143
I-10 Bellingham	3	281	245	182
I-11 Mount Vernon	5	194	173	65
I-12 Walla Walla	3	202	153	153
I-13 Pasco-Kennewick	2	174	250	250
I-14 Wenatchee	5	230[1]	239	239
R-1 Port Angeles	2	150	119	68
R-2 Port Townsend	1	90	90	29
R-3 Forks	0	0	0	0
R-4 Raymond-South Bend	2	55	54	14
R-5 Shelton	2	70	64	64
R-6 Coulee Dam	1	46	46	46
R-7 Colville	3	100	79	79
R-8 Tonasket-Republic	2	57	54	54
R-9 Davenport	0	0	0	0
R-10 Ritzville-Sprague	1	18	18	0
R-11 Ione	1	10	10	0
R-12 Sunnyside-Prosser	2	50	46	46
R-13 Ellensburg	4	116	125	106
R-14 Goldendale	1	28	25	0
R-15 Pomeroy	2	29	29	29
R-16 Connell	0	0	0	0
R-17 Brewster-Okanogan	2	31[1]	43	43
R-18 Ephrata	1	25	19	19
ALL AREAS	112	8,937	8,423	7,891

[1] Excludes hospital facilities under construction November 1, 1948, as follows: Area B-2, Enumclaw Community Memorial Hospital, 20 beds; B-3, Sacred Heart Hospital, Spokane, 106-bed net addition; I-7, Yakima Valley Memorial Hospital, 135 beds; I-14, Douglas County Memorial Hospital, Waterville, 12 beds; and R-17, Brewster Community Hospital, 15 beds.

[2] Includes hospitals under construction November 1, 1948.

there is on the average an equivalent of slightly more than one day of hospital care per year provided for each person in the State. The number of beds which would be used in each area at this rate is shown in Appendix Table 6.

Application of Criteria to Establish the Need for Hospital Beds by Areas.

The estimates from the three criteria explained served as a basis for determining area total needs. With one or two exceptions the need was estimated to be not less that the average census and not greater than the higher of the other two criteria. Where, within this range, the estimate should be placed depended upon the judgment of the State survey and planning staff. On the basis of their knowledge of local conditions an attempt was made to weigh all intangible factors and thus arrive at a better estimate than could be secured by utilization solely of any statistical measures available. The magnitude of the total need determines if any area has special requirements over and above the area minimums or the existing acceptable beds. A tabulation of the statistical guides used for those areas with special need is presented in Table 3. Table 4 presents for all areas the number of beds which would be needed according to the area ratio, the special requirements as assigned to the various areas, the number of acceptable beds now in existence or recommended, and the additional beds which are necessary to increase the existing facilities to this estimated need. A detailed explanation of the allocation of beds to the various areas is contained in the official State Plan on file with the State Department of Health.

Table 3.—ESTIMATION OF GENERAL HOSPITAL BED NEEDS BY AREAS OF SPECIAL NEED, STATE OF WASHINGTON, 1948[1]

Hospital Service Areas	*Average Census*	*Estimated Beds Needed by Bed-Death Ratio*[3]	*Estimated Beds Needed by State Average Usage*[3]	*Total Beds Needed*
B-1 Seattle	2,060	2,981[2]	2,511[2]	3,032[6]
B-3 Spokane	796	1,060[2]	886[2]	1,160[6]
I-3 Aberdeen-Hoquiam	199	248[2]	194[2]	243
I-10 Bellingham	201	314[2]	239[2]	281
I-12 Walla Walla	155	193[2]	154	173
I-13 Pasco-Kennewick	102	88	149	295[4]
R-1 Port Angeles	87[5]	86	75	73
R-2 Port Townsend	31	45	40	49
R-3 Forks	....	19	19	18
R-4 Raymond-South Bend	33	59	52	56
R-9 Davenport	....	36	33	28
R-10 Ritzville-Sprague	10	27	25	23
R-11 Ione	7	12	15	12
R-14 Goldendale	16	28	28	24
R-16 Connell	....	13	13	17
I-8 Vancouver—Special need at White Salmon or Stevenson because of isolation—15 Beds				535
R-13 Ellensburg—Special need at Cle Elum because of isolation, industrial hazard and highway and railway accidents—25 Beds				131

[1] Data from unpublished studies on file in Hospital Planning and Development Section, Washington State Department of Health.

[2] Calculation was on basis of 80 per cent occupancy.

[3] Includes estimated referrals between areas. Occupancy, except as indicated, is calculated on the basis of the formula $3\sqrt{ADC} + ADC$.

[4] Includes the Richland hospitals with 195 beds which are not open to all of the population.

[5] Includes patients from Area R-3.

[6] The residual after all other allocations were made was placed in Seattle and Spokane areas.

Enumeration and Appraisal of Existing Facilities.

The number of additional beds needed in each area is the difference between those now available and the need as determined by the methods just explained. In order to have a basis for counting existing facilities available for general hospital care it is necessary to establish the criteria for enumeration. As is generally recognized, many hospitals throughout the State have been caring for many more patients than the normal capacity of their physical plant. For planning purposes the capacity of each hospital was determined on the basis of its originally designed capacity, if known, otherwise on the basis of approximately 80 square feet per bed in wards and 100 square feet in private rooms. Any given hospital, therefore, may

Table 4.—GENERAL HOSPITAL FACILITIES NEEDED BY AREAS, STATE OF WASHINGTON, 1948

Hospital Service Areas for General Hospitals	*Beds Allowed by Area Ratio*	*Acceptable and/or Recommended Beds*	*Additional Beds Needed*①
B-1 Seattle	2,898	3,032	683
B-2 Tacoma	1,182	1,182	261
B-3 Spokane	976	1,160	199
I-1 Everett	410	410	168
I-2 Bremerton	343	343	116
I-3 Aberdeen-Hoquiam	218	243	43
I-4 Centralia-Chehalis	185	185	124
I-5 Olympia	163	163	49
I-6 Colfax	121	179	0
I-7 Yakima	410	488	0
I-8 Vancouver	329	535	15
I-9 Longview-Kelso	231	231	88
I-10 Bellingham	261	281	99
I-11 Mount Vernon	236	236	171
I-12 Walla Walla	149	173	20
I 13 Pasco-Kennewick	159	295	45
I-14 Wenatchee	188	239	0
R-1 Port Angeles	48	73	5
R-2 Port Townsend	23	49	20
R-3 Forks	13	18	18
R-4 Raymond-South Bend	41	56	42
R-5 Shelton	31	64	0
R-6 Coulee Dam	32	46	0
R-7 Colville	43	79	0
R-8 Tonasket-Republic	28	54	0
R-9 Davenport	23	28	28
R-10 Ritzville-Sprague	18	23	23
R-11 Ione	7	12	12
R-12 Sunnyside-Prosser	60	60	14
R-13 Ellensburg	61	131	25
R-14 Goldendale	19	24	24
R-15 Pomeroy	37	37	8
R-16 Connell	7	17	17
R-17 Brewster-Okanogan	42	43	0
R-18 Ephrata	21	21	2

① This represents the amount which the existing acceptable beds are less than the area ratio plus any special requirements of the area except for those areas already having more beds than the area ratio yet having special requirements.

because of overcrowding be using in excess of the normal capacity as estimated by the survey. The number of hospitals and general hospital beds in use as well as their normal capacity is given for each area in Table 2. The general standards established for an acceptable hospital, as presented in the Administrative Section of this Plan, were applied to general hospitals in the following manner: (1) Any hospital building which was known to be a hazard because of danger from fire was classed as non-acceptable. With few exceptions frame buildings in which patients were housed above the first floor were considered to be in this category. (It is also recognized that many masonry buildings are hazardous because of interior frame construction, but detailed inspections to determine the extent of such conditions are not feasible at present.) (2) Any building that is obsolete or not built for hospital use and believed to be unsuitable for satisfactory remodeling was classed as non-acceptable. (3) In some cases it was found that by reason of the width of halls, location of buildings, or other features of the hospital design, the building could not be classified as an acceptable institution.

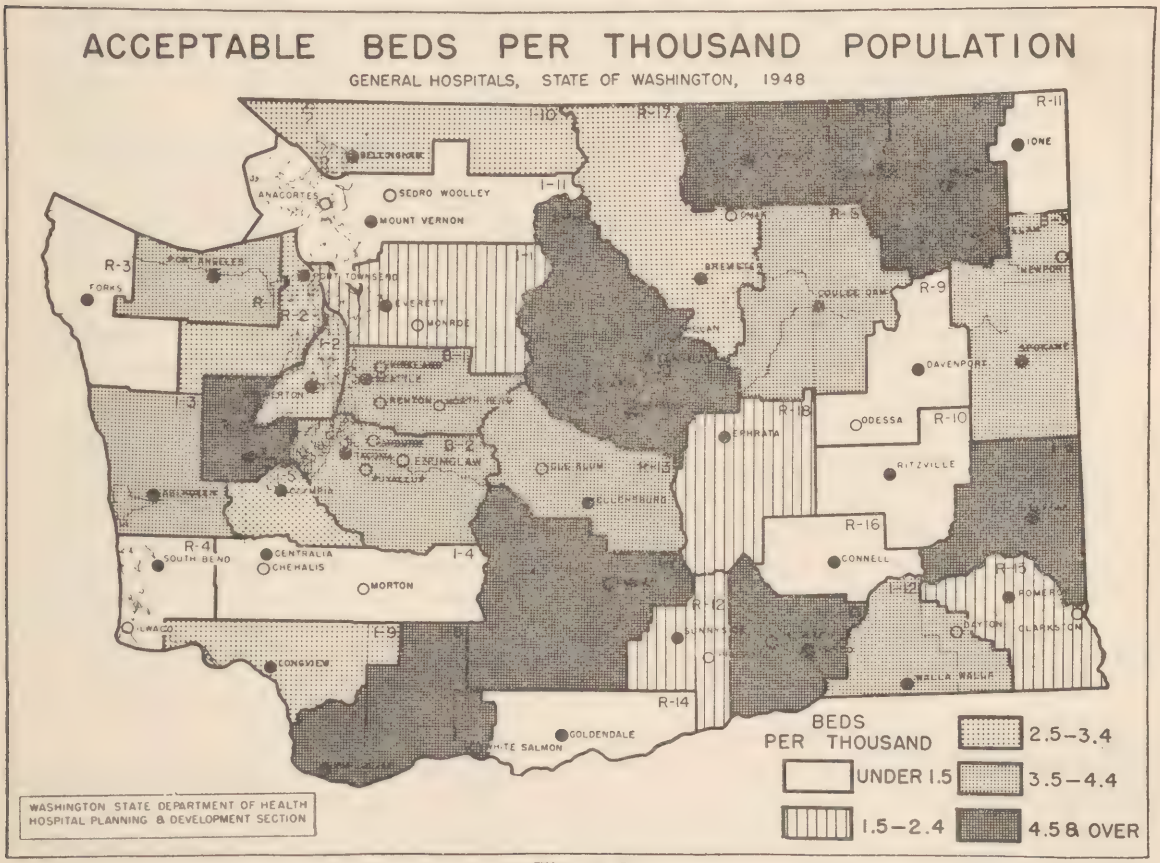


Figure 3

A detailed description of each hospital classified as non-acceptable is on file with the State Department of Health. On the basis of the determination made it was found that 7,891 general hospital beds were located in acceptable buildings and that 532 beds were in non-acceptable buildings. In addition to those beds excluded there are about 700 more considered undesirable but accepted on a temporary basis in order to focus attention on the areas of most critical need. The number of existing acceptable beds in each area is shown in Tables 2 and 5. Expressed in terms of beds per thousand persons, it can be seen at a glance which sections of the State have the most

hospital beds available. (See Figure 3.) The State of Washington as a whole already has more beds in relation to the population than a good many states.

In determining the number of existing acceptable beds for each area all hospital construction scheduled is included whether or not it is being assisted with Federal funds. Hospitals planned are considered as scheduled only if they are under contract or are already nearing completion. For purposes of planning, all hospitals scheduled appear as if they were already in existence.

Table 5.—ACCEPTABLE GENERAL HOSPITAL BEDS PER 1,000 POPULATION BY SERVICE AREAS, STATE OF WASHINGTON, 1948

Hospital Service Areas	*Population*	*Acceptable Beds*	*Beds Per 1,000 Population*
B-1 Seattle	643,982	2,349	3.6
B-2 Tacoma	262,598	921	3.5
B-3 Spokane	216,961	961	4.4
I-1 Everett	102,481	242	2.4
I-2 Bremerton	85,729	227	2.6
I-3 Aberdeen-Hoquiam	54,479	200	3.7
I-4 Centralia-Chehalis	46,258	61	1.3
I-5 Olympia	40,816	114	2.8
I-6 Colfax	30,151	179	5.9
I-7 Yakima	102,387	488	4.8
I-8 Vancouver	82,197	520	6.3
I-9 Longview-Kelso	51,632	143	2.5
I-10 Bellingham	65,250	182	2.8
I-11 Mount Vernon	58,950	65	1.1
I-12 Walla Walla	37,352	153	4.1
I-13 Pasco-Kennewick	39,862	250	6.3
I-14 Wenatchee	46,936	239	5.1
R-1 Port Angeles	19,050	68	3.6
R-2 Port Townsend	9,189	29	3.2
R-3 Forks	5,018	0	...
R-4 Raymond-South Bend	16,313	14	.9
R-5 Shelton	12,253	64	5.2
R-6 Coulee Dam	12,725	46	3.6
R-7 Colville	17,156	79	4.6
R-8 Tonasket-Republic	11,270	54	4.8
R-9 Davenport	9,001	0	...
R-10 Ritzville-Sprague	7,052	0	...
R-11 Ione	2,967	0	...
R-12 Sunnyside-Prosser	24,022	46	1.9
R-13 Ellensburg	24,469	106	4.3
R-14 Goldendale	7,775	0	...
R-15 Pomeroy	14,797	29	2.0
R-16 Connell	2,993	0	...
R-17 Brewster-Okanogan	16,663	43	2.6
R-18 Ephrata	8,266	19	2.3
ALL AREAS	2,195,000	7,891	3.6

① Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

Chapter 2. Delineation of General Hospital Service Areas and Determination of Population.

Delineation of General Hospital Service Areas:

The delineation of hospital service areas is perhaps one of the most important procedures in the entire State Plan. The areas must be so delineated that their resulting classification is in accordance with logical hospital development. The area classification determines the number of beds required as the minimum for the area. The extent of a hospital area affects the determination of need by its inclusion or exclusion of existing hospitals which might have been included in an adjoining area. Many geographic areas in the State could be delineated which have no hospital facilities and therefore would receive first priority in the allocation of funds, but such small areas could not logically support hospitals and would leave adjoining areas with an apparent surplus of facilities.

The Rules and Regulations of the Surgeon General designate a hospital service area as one which takes into account such factors as population distribution, natural geographic boundaries, transportation and trade patterns, all parts of which are reasonably accessible to existing or proposed hospital facilities. Our determination of an area follows three steps:

1. Determination of possible area centers.
2. Estimation of approximate size and extent of the area.
3. Final location of the area boundary.

Maps illustrating the various factors considered are included herewith as each is discussed. For purposes of illustrating the second and third steps in area delineation the Spokane Hospital Service Area has been chosen as an example.

(1) From the Hospital Survey a map was prepared of the State which showed all towns having general hospitals by means of symbols indicating the size of the largest existing facility (Figure 4). A parallel map was prepared showing by symbol the size of all towns and cities within the State with more than one thousand population (Figure 5). It was felt that the existing habit patterns of the people with respect to hospitals were perhaps most important when determining where hospitals should be. Admittedly, some areas were lacking in facilities and other areas had an excessive number of hospitals. It was felt, however, that an established hospital center with 50 beds or more and a history of reasonable occupancy should certainly continue as a center under provisions of the State Plan.

In the consideration of population centers it was considered highly improbable that any town of less than 1,000 population would be suitable as a hospital center. This judgment is based on both the availability of personnel including physicians, nurses, X-ray and laboratory technicians and maintenance personnel, and also the necessity for adequate supply channels for food, fuel, medications, etc. A careful consideration was given to the scatter and groupings making up the distribution of the population. A clear visual picture of the clustering of the population around the population centers may be seen from a dot map of the State of Washington (Figure 6). Where possible the area borders were drawn through the areas of least density of population.

(2) Having thus determined the location of existing hospitals and possible centers based on population, preliminary area delineations were made by dividing the distance between each center (Figure 7.). The boundaries were then modified in

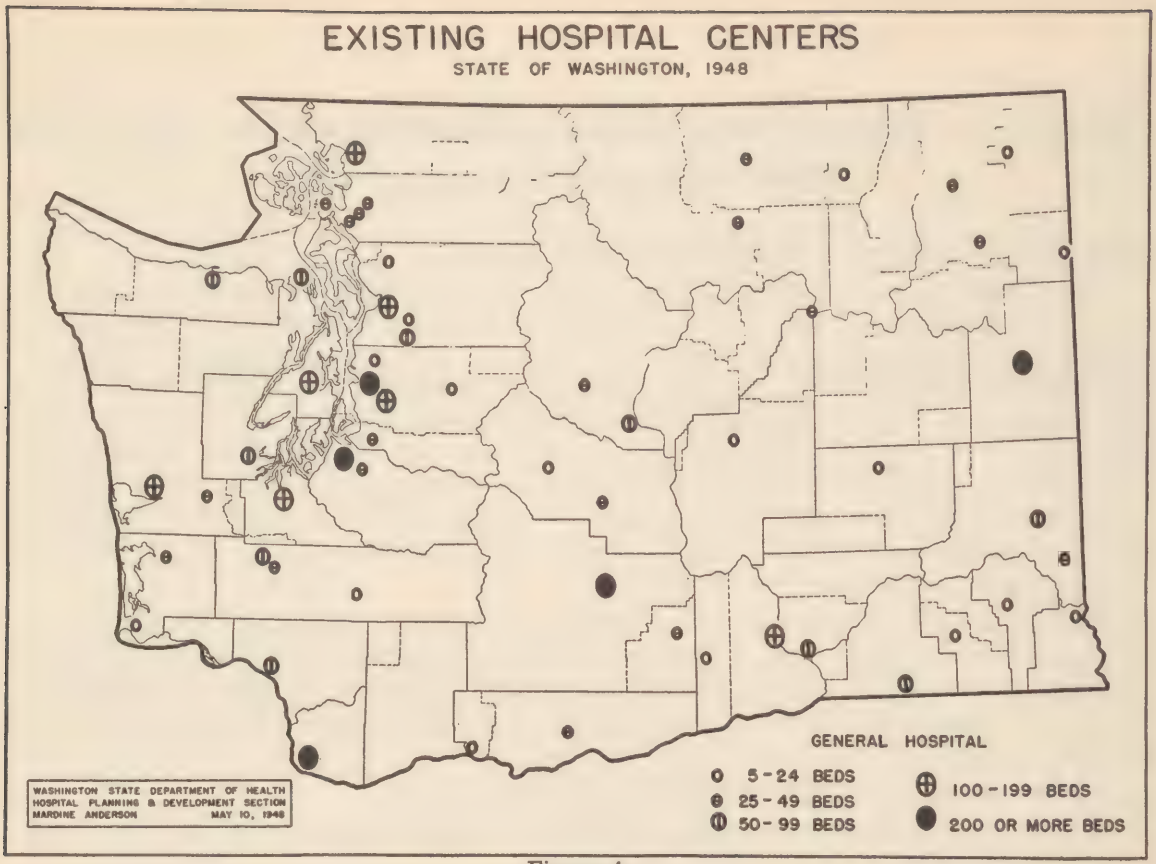
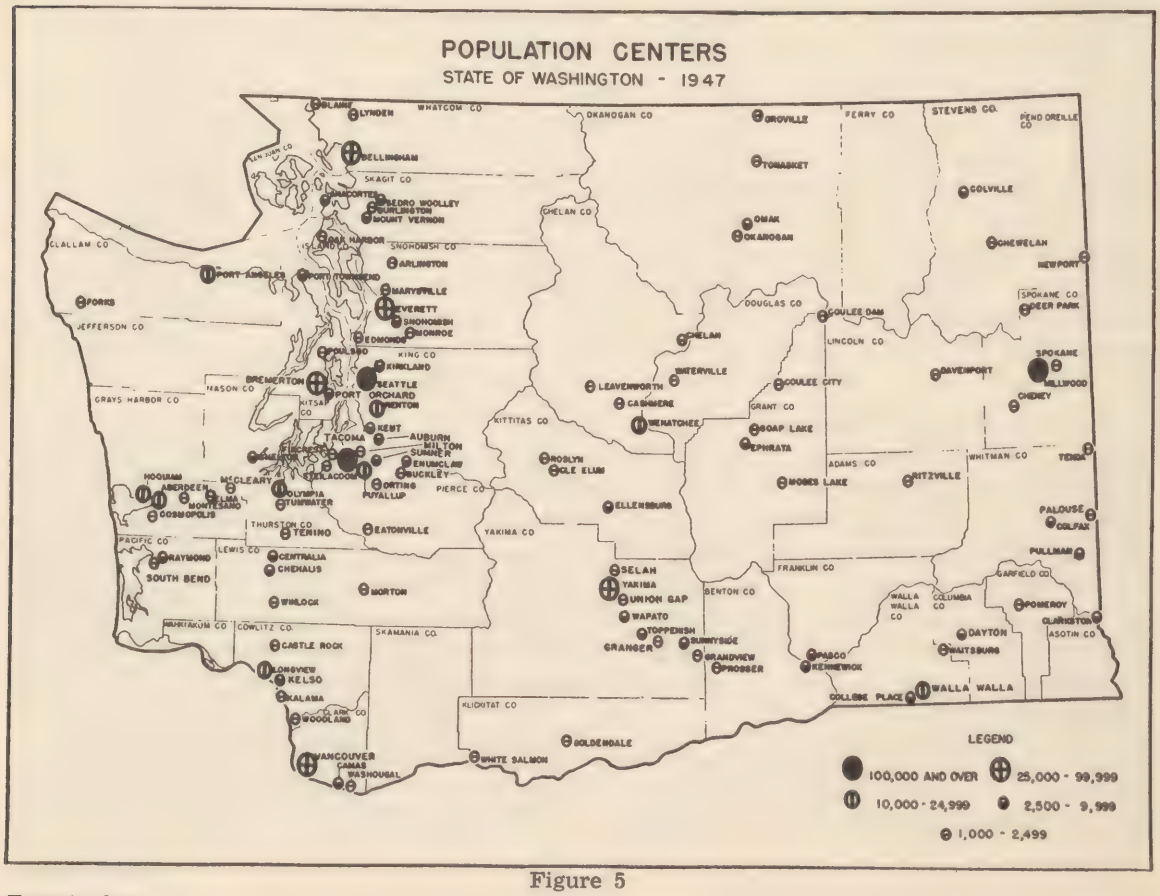


Figure 4



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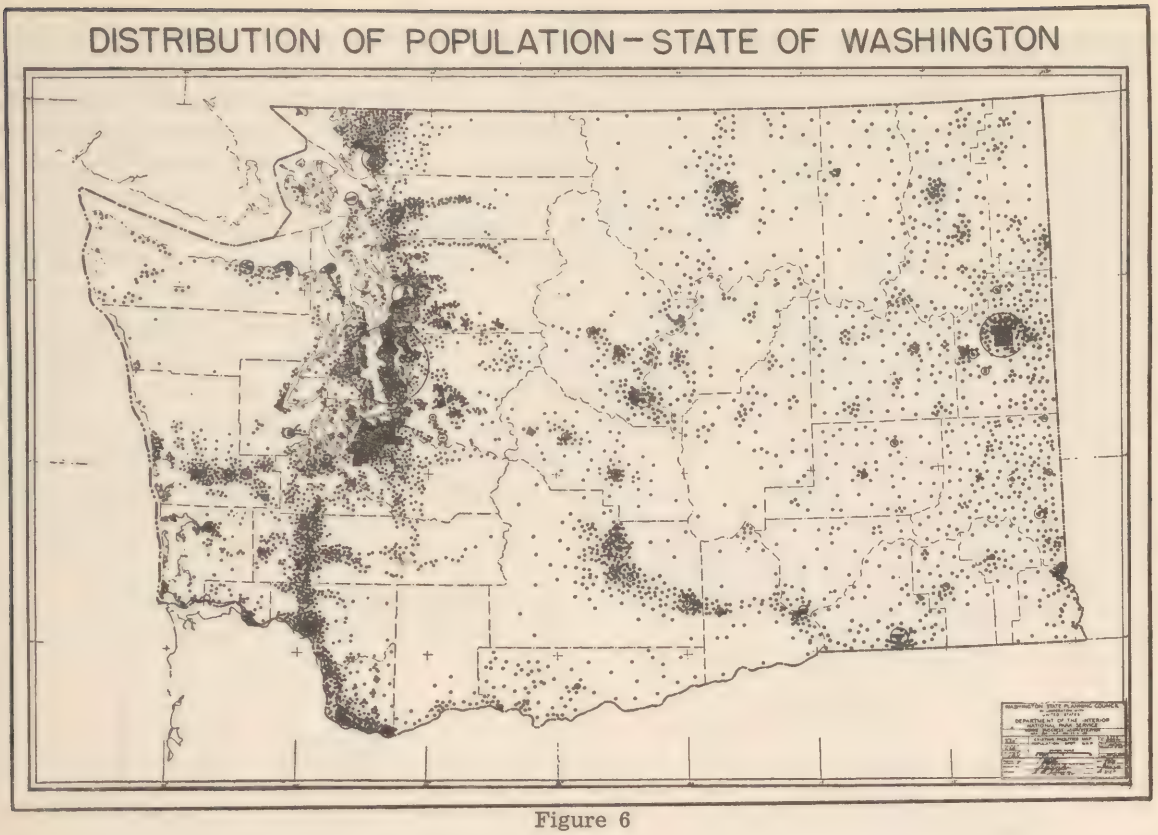

Figure 6

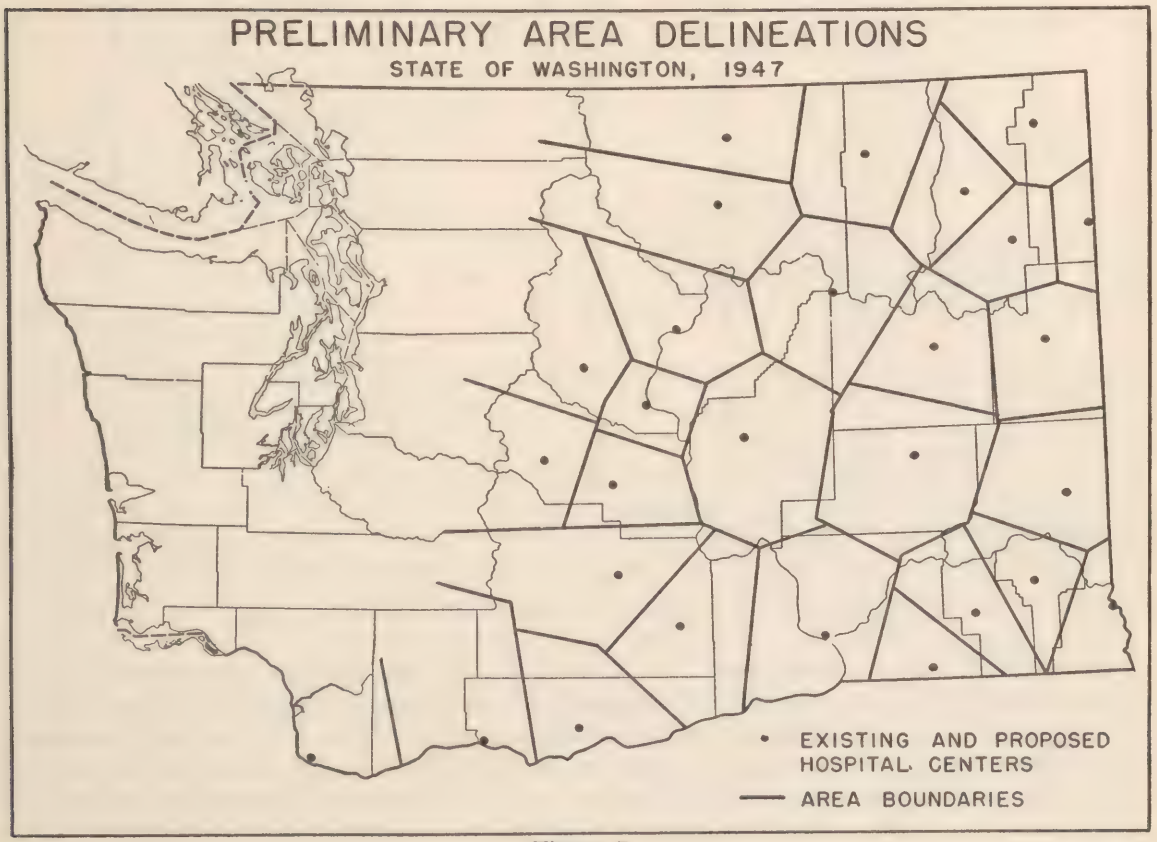

Figure 7

accordance with natural geographic barriers such as rivers and mountains. The tentative delineation was then evaluated in terms of the distance from provisional boundaries to the area center and the total population of the area (Figure 8). It was felt that if possible all portions of the area should be within one hour's traveling time of a hospital and that no area should have less than 15,000 people. It is considered that 15,000 people is approximately the minimum necessary to maintain a 50-bed general hospital. Such a hospital is estimated by the U. S. Public Health Service as the smallest general hospital which can efficiently operate and yet provide the necessary facilities for adequate hospital care. The accessibility of all portions of the area were measured in terms of available transportation and a detailed study made of the type of roads in existence (Figure 9). In most cases the areas which for other reasons were found to comprise homogeneous units were found to have adequate transportation facilities available to all populated portions. In so far as information was available as to trade areas, this was utilized simultaneously to help determine where area boundaries should be planned. Where people go to make purchases and transact business is where they are apt to want to go for hospital care.

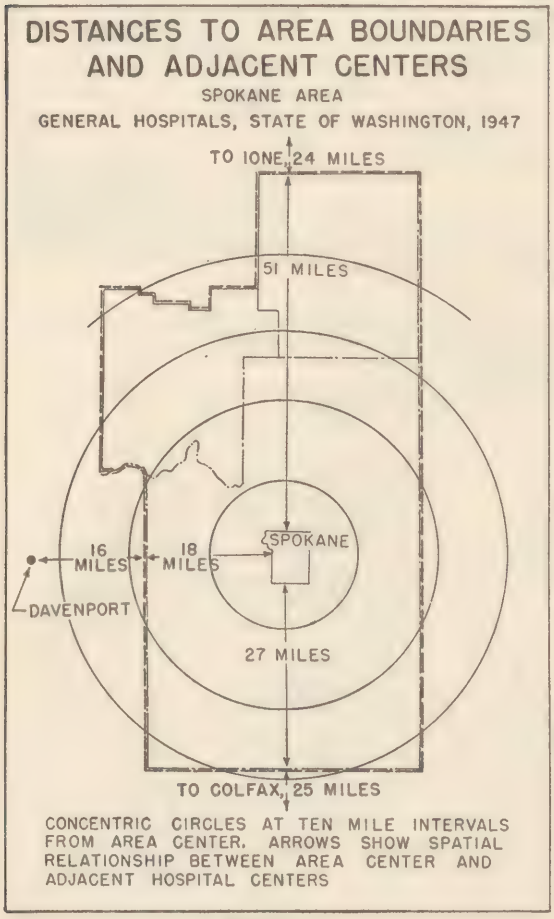

Figure 8

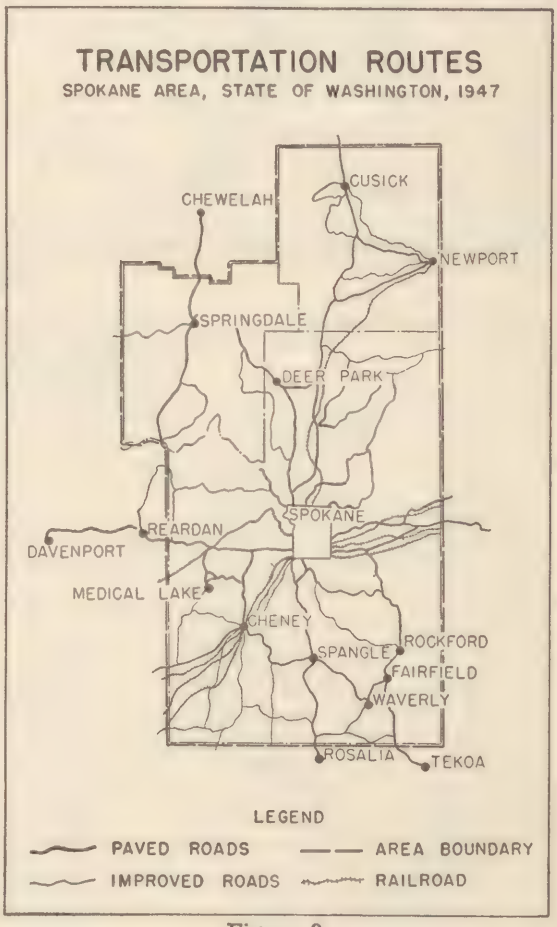

Figure 9

(3) When the centers were designated and an appropriate compromise made between the size of an area and the accessibility of hospital facilities, the final determination of hospital service area boundaries was made on the basis of the service areas of existing hospitals, school areas which have been found to be satisfactory for high school districts in the reorganization plan of the State Department of Public Instruction, the traffic flow on highways, and existing political boundaries.

The service areas of existing hospitals in all cases in so far as delineation was possible were given first consideration (Figure 10). The service area boundary for the small institution is relatively much less important even though it may be equally far from the hospital as the boundary for the large institution. A recognition of the existing service areas is important not only in so far as the present pattern represents a synthesis of the forces having brought it about but also because habit or custom in itself is an important factor influencing hospital usage.

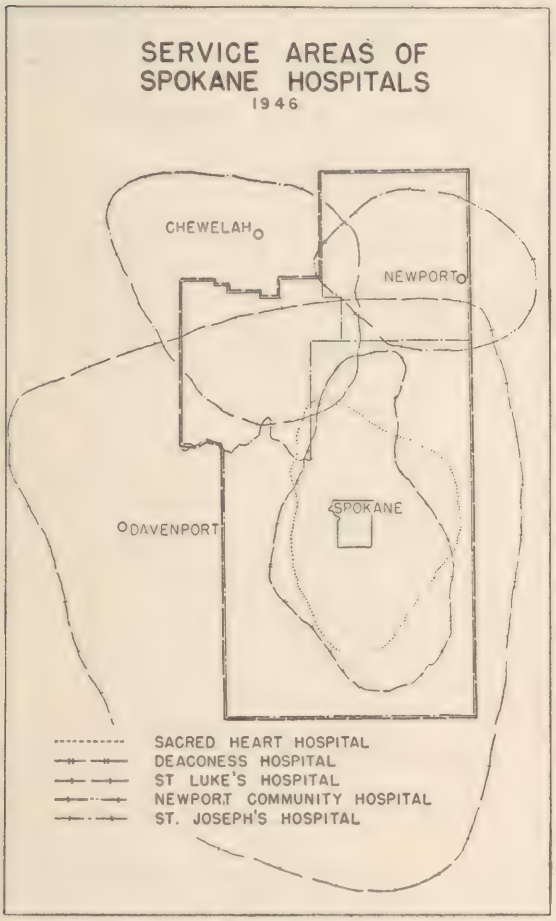

Figure 10

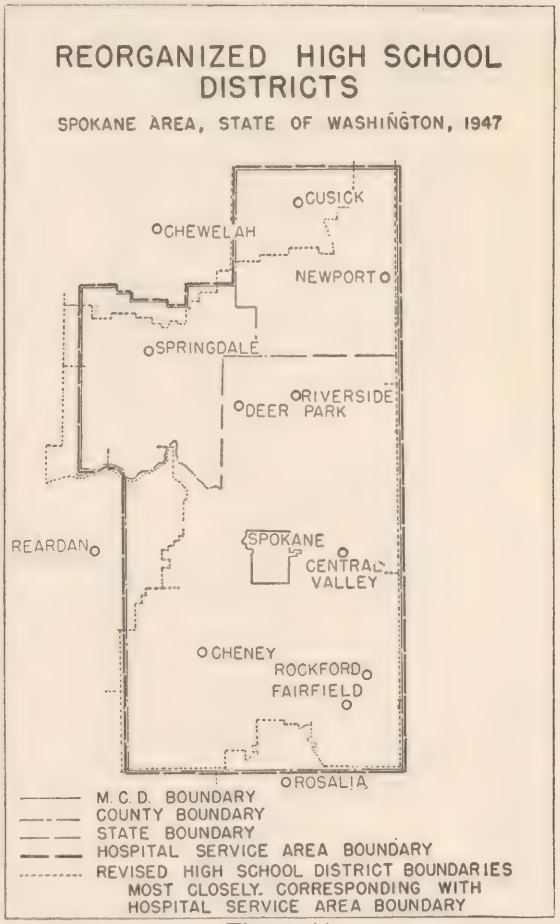

Figure 11

The State Department of Public Instruction has for years made extensive studies of school district organization (Figure 11). The studies have included questionnaires completed by the students as to the family trading center and related data. The size of high school districts is much less than would be expected for hospitals and so in most cases the hospital area would contain a group of school districts. The location of the peripheral boundaries of this group of school communities should, however, be indicative of the desirable boundary line for the hospital area.

In the utilization of traffic flow maps, the points throughout the State were determined which have significantly fewer cars per day than other areas closer or farther away from the area center (Figure 12). Theoretically, the boundary of a hospital service would correspond to the low point in the volume of highway traffic. A person living on either side of this theoretical point would go in his respective direction to separate trade centers. Actually there are no zero points in traffic flow but rather an overlapping and hence only general indications of area borders are possible from this source.

In almost all cases it was possible to make the boundaries of the area correspond with the existing political subdivisions, county, State and minor civil division boundaries (Figure 13). Only in those cases where good reason was found to depart from the political boundaries were other locations chosen.

Determination of Population

Having thus delineated the boundaries of the hospital service area, the population of each was determined as of 1940, utilizing U. S. Department of Commerce census reports for minor civil divisions. In those instances where a hospital service area

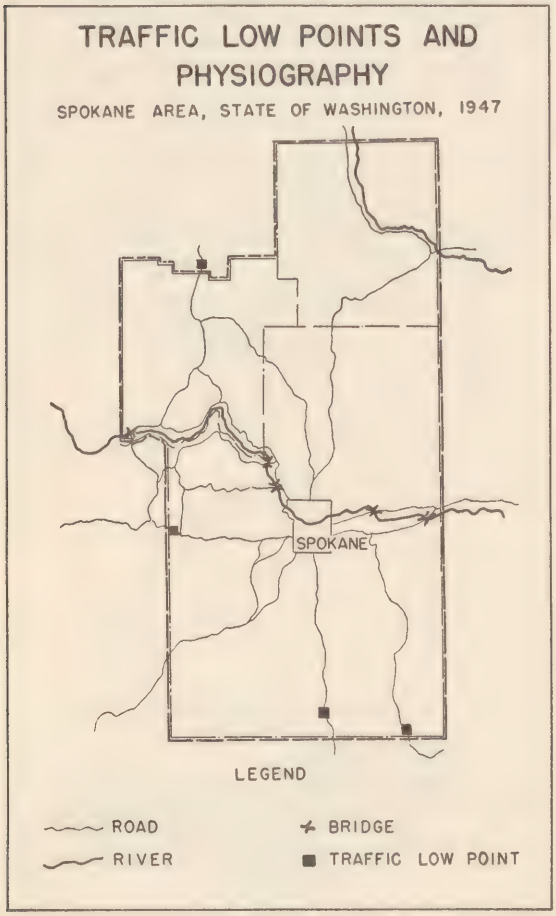

Figure 12

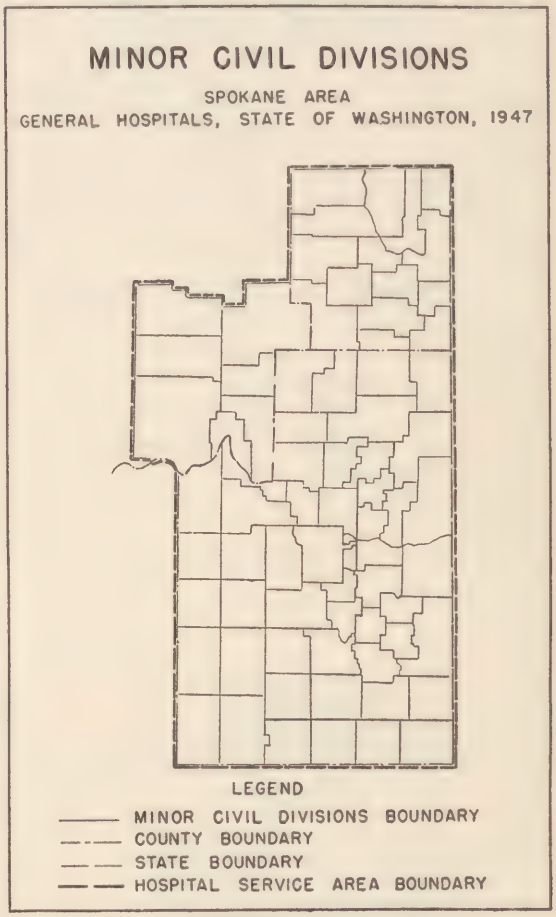

Figure 13

boundary partioned a minor civil division, the population was apportioned to each area in accordance with the best information available as to population distribution within the minor civil division. The population thus determined for 1940 was then adjusted to the 1947 population for each city and county as estimated by Washington State Department of Health, the University of Washington and the Washington State Department of Social Security in their joint estimate of population. The 1947 population as thus estimated was increased to the official 1947 United States census estimate by the ratio of the 1947 state total to the 1947 federal total. The 1947 population estimates carried the county total and urban population figures only. For this reason it was necessary to estimate the part of the county population in each of the hospital service areas into which the county was divided. To do this the urban population for 1947, if any, served as a base to which was added a segment of the county's rural population having the same relation to the total rural population in 1947 as the rural segment included had to the total rural population of the county in 1940.

This procedure is illustrated in Tables 6 and 7 and Figure 14 and a summary of the calculations for all areas is presented in Appendix B.

Table 6.—SPOKANE HOSPITAL SERVICE AREA (B-3)
COMPUTATION OF POPULATION AND LAND AREAS IN SQUARE MILES, 1940①

Political Divisions Included in Hospital Service Area

County	*Minor Civil Divisions*	*Population*	*Land Area*
Pend Oreille	Bear Paw	26	23.5
	Beglund	113	21.9
	Camden	159	18.6
	Cusick	698	50.4
	Dalkena	296	19.8
	Diamond Lake	264	35.0
	Fertile Valley	192	52.2
	Furport	120	30.2
	Johnston	158	25.6
	Lenora	271	40.3
	N. Newport	970	38.8
	Rocky Ford	44	47.1
	Sacheen	62	29.7
	S. Newport	638	15.5
	Usk	381	37.8
	TOTAL	4,392	486.4
Stevens	Forest Center	367	71.6
	Springdale	636	63.3
	Walker's Prairie	509	121.4
	Loon Lake	460	97.9
	Clayton	552	33.6
	Williams Valley	455	49.3
	Tum Tum	118	25.3
	TOTAL	3,097	462.4
Spokane	(Entire county)	164,652	1,763.0
	TOTAL	164,652	1,763.0
Hospital Service Area Total		172,141	2,711.8

① Population values are taken from "Population, First Series, Number of Inhabitants, Washington," 16th Census of the United States, 1940, Bureau of the Census. Land area values are taken from "Areas of the United States," 1940, 16th Census of the United States: 1940, Bureau of the Census.

Table 7.—CALCULATION OF POPULATION, SPOKANE SERVICE AREA GENERAL HOSPITALS, STATE OF WASHINGTON, 1947

I. Conversion of population Factor from 1940 to 1947.

County or Part Thereof	*Population—1940* ① *Included*	*Excluded*	*Total*	*Population—1947* ② *Included*	*Excluded*	*Total*
Spokane	164,652	0	164,652	198,700	0	198,700
Stevens	3,097	16,178	19,275	2,771	15,829	18,600
Rural	3,097	12,195	15,292	2,771 ③	10,914	13,685
Colville	0	2,418	2,418	0	3,065	3,065
Chewelah	0	1,565	1,565	0	1,850	1,850
Pend Oreille	4,392	2,764	7,156	4,681	2,819	7,500
Rural	3,218	2,764	5,982	3,281	2,819	6,100
Newport	1,174	0	1,174	1,400	0	1,400
AREA TOTAL ..	172,141			206,152		

II. Adjustment of 1947 Hospital Service Area total to the 1947 U. S. Bureau of Census estimate.

The 1947 estimate as calculated above is increased to the 1947 U. S. Bureau of Census estimate by the ratio of the Washington State Department of Health population estimate for the State to the U. S. Bureau of Census population estimate for the State.

i.e., (206,152) (1.052,434) = 216,961

① Civilian population as of April 1, 1940, from Table 4, pages 3-13, "Population, First Series," 16th Census of the United States.

② Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by the Washington State Department of Health, Section of Public Health Statistics.

③ Calculated as follows:

Stevens County 1940 rural population included in the area/Stevens County 1940 total rural population = ratio assumed to exist in 1947, i.e., 3,097/15,292 = 0.20252.

(Stevens County 1947 total rural population) (ratio) = Stevens County 1947 rural population included in the area, i.e.: (13,685) (0.20252) = 2,771.

Pend Oreille County: 3,218/5,982 = 0.537947; (6,100) (0.537947) = 3,281.

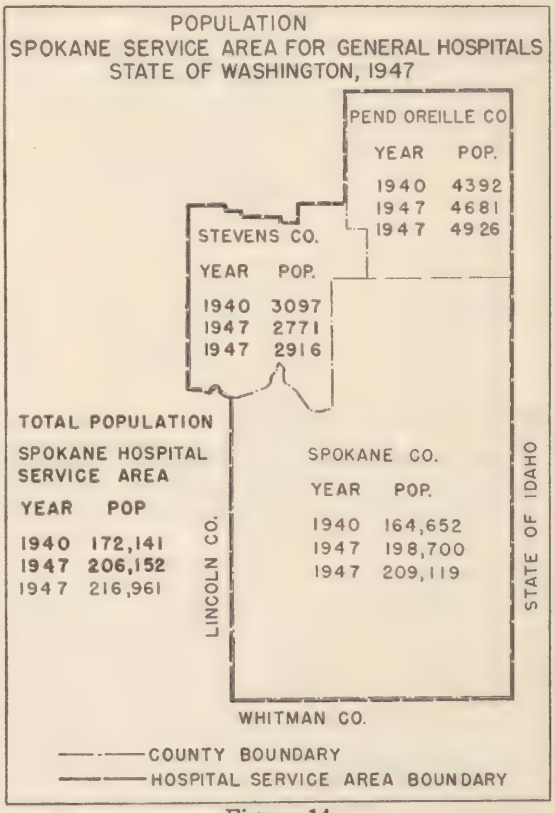

Figure 14

Chapter 3. Determination of Priorities for General Hospital Projects

Area Priorities—General Hospitals.

The order in which applications from the various areas would be considered for assistance has been established in accordance with the Federal law and regulations. The relative position of each hospital area was determined primarily on the basis of the percentage of need met in each area. The percentage of need met is determined by the ratio of the number of existing acceptable beds to the needs as determined according to the requirements and criteria explained in Chapter I.

Some areas may already have an abundance of hospital beds on an area-wide basis yet have an acute need in an isolated portion of the area. Thus the critical need in some communities is not accurately reflected by the percentage of need which is met on an area-wide basis. In other areas, principally some of those for which the need is considered to be the minimum area ratios, a combination of factors results in a small percentage of need met even though present facilities may be nearly adequate. By adjustment of the priorities in several areas it was possible to partially compensate for these inequalities. The per cent of need met for each area is presented in Figure 15 and Table 11. A detailed explanation of the reason for all adjustments in priority is on file with the State Department of Health.

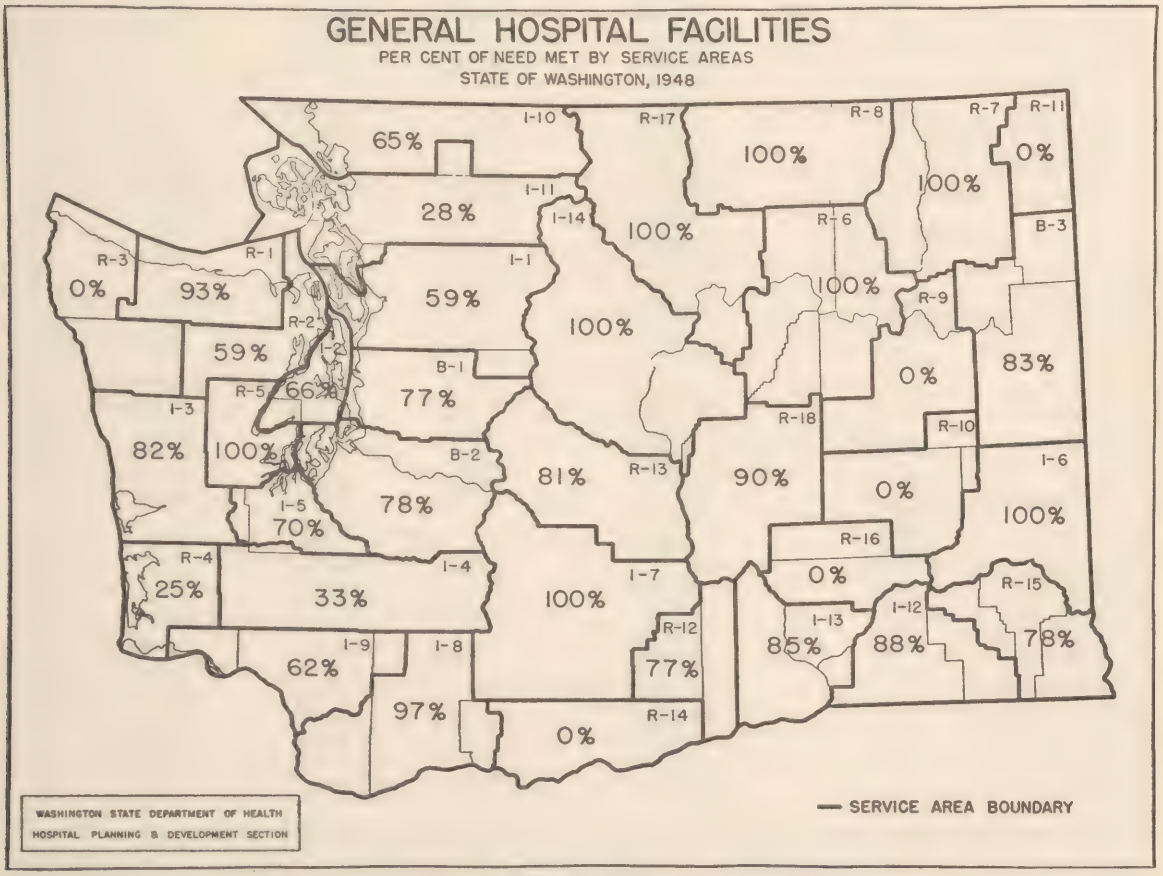

Figure 15

The preliminary priority order determined from the percentage of need met was adjusted after consideration was given to several factors. Those factors consid-

ered most important in a determination of priority are as follows: (1) the provision of services for persons located in rural communities and areas with relatively small financial resources; (2) the number of people without facilities and the distance to available hospitals; (3) the habit patterns of people and expressed demand for beds as shown in terms of the history of utilization of existing facilities; (4) the existence of unacceptable facilities and hospital projects already planned; (5) the importance of the area as a regional center; and (6) the expected population trends.

Table 8.—URBAN AND RURAL POPULATION, SERVICE AREAS FOR GENERAL HOSPITALS, STATE OF WASHINGTON, 1947[1]

Hospital Service Area	*Rural Population*	*Urban[2] Population*	*Total*	*Percentage Rural*	*Per Cent of State Average*
B-1 Seattle	129,867	514,115	643,982	20	53
B-2 Tacoma	84,603	177,995	262,598	32	84
B-3 Spokane	55,892	161,069	216,961	26	68
I-1 Everett	54,513	47,968	102,481	53	139
I-2 Bremerton	44,710	41,019	85,729	52	137
I-3 Aberdeen-Hoquiam	15,213	39,266	54,479	28	74
I-4 Centralia-Chehalis	30,116	16,142	46,258	65	171
I-5 Olympia	20,222	20,594	40,816	50	132
I-6 Colfax	18,161	11,990	30,151	60	158
I-7 Yakima	52,921	49,466	102,387	52	137
I-8 Vancouver	47,910	34,287	82,197	58	153
I-9 Longview-Kelso	26,853	30,779	57,632	47	124
I-10 Bellingham	26,963	38,287	65,250	41	108
I-11 Mount Vernon	39,435	19,515	58,950	67	176
I-12 Walla Walla	6,595	30,757	37,352	18	47
I-13 Pasco-Kennewick	11,973	27,889	39,862	30	79
I-14 Wenatchee	26,504	20,432	46,936	56	147
R-1 Port Angeles	7,684	11,366	19,050	40	105
R-2 Port Townsend	2,348	6,841	9,189	26	68
R-3 Forks	3,855	1,163	5,018	77	203
R-4 Raymond-South Bend	9,602	6,711	16,313	59	155
R-5 Shelton	7,781	4,472	12,253	64	168
R-6 Coulee Dam	8,697	4,028	12,725	68	179
R-7 Colville	11,983	5,173	17,156	70	184
R-8 Tonasket-Republic	8,259	3,011	11,270	73	192
R-9 Davenport	7,610	1,391	9,001	85	224
R-10 Ritzville-Sprague	5,052	2,000	7,052	72	189
R-11 Ione	2,967	0	2,967	100	263
R-12 Sunnyside-Prosser	13,871	10,151	24,022	58	153
R-13 Ellensburg	12,677	11,792	24,469	52	137
R-14 Goldendale	5,731	2,044	7,775	74	195
R-15 Pomeroy	8,781	6,016	14,797	59	155
R-16 Connell	2,993	0	2,993	100	263
R-17 Brewster-Okanogan	10,861	5,802	16,663	65	171
R-18 Ephrata	866	7,400	8,266	10	26
ALL AREAS	824,069	1,370,931	2,195,000	38	100

[1] Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by Washington State Department of Health, Section of Public Health Statistics; "Populations of the Chartered and Incorporated Towns and Cities of the State of Washington: April 1, 1940, April 1, 1947, and April 1, 1948," Washington State Census Board; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

[2] Centers of poulation of one thousand or more persons are considered urban.

Five priority groups were established with the percentage of need met and number of areas in each group as follows:

Priority Symbol	*Percentage of Need Met*	*Number of Areas*	*Priority Symbol*	*Percentage of Need Met*	*Number of Areas*
A	0 — 20	3	D	61 — 80	10
B	21 — 40	3	E	81 — 99	8
C	41 — 60	2	F	100	9

The three areas in Group A have 0 per cent of need met. These, therefore, together with the 9 areas having 100 per cent of need met require special consideration.

Table 9.—GROSS EFFECTIVE BUYING INCOME OF POPULATION BY SERVICE AREAS FOR GENERAL HOSPITALS, STATE OF WASHINGTON, 1947

Hospital Service Areas	*Effective Gross Income (000 Omitted)*[1]	*Income Per Capita*[2]	*Percent of State Average Income*
B-1 Seattle	$1,190,889	$1,849	123
B-2 Tacoma	447,679	1,705	113
B-3 Spokane	398,775	1,838	122
I-1 Everett	115,400	1,126	75
I-2 Bremerton	75,399	879	58
I-3 Aberdeen-Hoquiam	89,527	1,643	109
I-4 Centralia-Chehalis	50,884	1,100	73
I-5 Olympia	58,819	1,441	96
I-6 Colfax	48,307	1,602	106
I-7 Yakima	120,960	1,181	79
I-8 Vancouver	98,165	1,194	79
I-9 Longview-Kelso	64,105	1,112	74
I-10 Bellingham	80,287	1,230	82
I-11 Mount Vernon	55,995	950	63
I-12 Walla Walla	62,500	1,673	111
I-13 Pasco-Kennewick	31,481	790	52
I-14 Wenatchee	66,262	1,412	94
R-1 Port Angeles	24,609	1,292	86
R-2 Port Townsend	10,577	1,151	76
R-3 Forks	6,444	1,284	85
R-4 Raymond-South Bend	22,467	1,377	92
R-5 Shelton	15,446	1,261	84
R-6 Coulee Dam	13,456	1,057	70
R-7 Colville	15,339	894	59
R-8 Tonasket-Republic	9,647	856	57
R-9 Davenport	12,030	1,337	89
R-10 Ritzville-Sprague	10,308	1,462	97
R-11 Ione	2,856	963	64
R-12 Sunnyside-Prosser	25,970	1,081	72
R-13 Ellensburg	30,397	1,242	83
R-14 Goldendale	8,876	1,142	76
R-15 Pomeroy	12,230	827	55
R-16 Connell	3,351	1,120	74
R-17 Brewster-Okanogan	14,661	880	58
R-18 Ephrata	9,447	1,143	76
ALL AREAS	$3,303,545	$1,505	100

[1] Estimates as reported on pages 472-476 of the magazine, "Sales Management," Volume 60, No. 10, May 10, 1948.

[2] Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," Series P-25, No. 4, Bureau of the Census, Department of Commerce.

In the three areas where there are not acceptable hospitals the order of priority was determined primarily by the rural-wealth index calculated from Tables 8 and 9. The financial resources of each area were calculated in terms of the per cent of the State average income and the ruralness of each area was expressed in terms of the relative deviation from the State average. The population living outside of urban centers of one thousand or more persons was considered rural. (See Appendix

Table 10. AREA RANK AS CALCULATED FROM RELATIVE WEALTH AND THE RURAL CHARACTER OF THE POPULATION, STATE OF WASHINGTON, 1948

Hospital Service Area	*Per Cent of State Average Income*	*Inverted Income Factor*①	*Per Cent of State Average Ruralness*	*Average of Income and Ruralness*	*Area Rank*
B-1 Seattle	123	77	53	65	35
B-2 Tacoma	113	87	84	86	30
B-3 Spokane	122	78	68	73	33
I-1 Everett	75	125	139	132	19
I-2 Bremerton	58	142	137	140	17
I-3 Aberdeen	109	91	74	82	31
I-4 Centralia	73	127	171	149	13
I-5 Olympia	96	104	132	118	25
I-6 Colfax	106	194	158	176	3
I-7 Yakima	79	121	137	129	21
I-8 Vancouver	79	121	153	137	18
I-9 Longview	74	126	124	125	24
I-10 Bellingham	82	118	108	113	27
I-11 Mt. Vernon	63	137	176	156	10
I-12 Walla Walla	111	89	47	68	34
I-13 Pasco	52	148	79	114	26
I-14 Wenatchee	94	106	147	126	23
R-1 Port Angeles	86	114	105	110	28
R-2 Port Townsend	76	124	68	96	29
R-3 Forks	85	115	203	159	8
R-4 Raymond	92	108	155	132	20
R-5 Shelton	84	116	168	142	15
R-6 Coulee Dam	70	130	179	154	11
R-7 Colville	59	141	184	162	6
R-8 Tonasket	57	143	192	168	4
R-9 Davenport	89	111	224	168	5
R-10 Ritzville	97	103	189	146	14
R-11 Ione	64	136	263	200	1
R-12 Sunnyside	72	128	153	140	16
R-13 Ellensburg	83	117	137	127	22
R-14 Goldendale	76	124	195	160	7
R-15 Pomeroy	55	145	155	150	12
R-16 Connell	74	126	263	194	2
R-17 Brewster	58	142	171	156	9
R-18 Ephrata	76	124	26	75	32

① One hundred less the per cent of state average income plus 100. This conversion gives priority to areas of low income.

Table 3.) The nine areas with 100 per cent of need met, i. e., which already have more than the estimated number of beds needed, were ranked in order from those with the smallest to those with the greatest percentage of excess facilities. The weighing of the several factors in determining special priorities for other areas was necessarily non-mathematical and depended upon the consideration of each factor according to the best judgment of the planning staff. The resulting area priorities are presented in Table 11.

Table 11.—PERCENTAGE OF NEED MET AND PRIORITY FOR FEDERAL ASSISTANCE IN CONSTRUCTION OF GENERAL HOSPITALS BY AREAS, STATE OF WASHINGTON, 1948①

Hospital Service Areas	*Per cent of Need Met*	*Priority Group*	*Tentative Priority*
B-1 Seattle	77	E	23
B-2 Tacoma	78	E	26
B-3 Spokane	83	E	21
I-1 Everett	59	C	7
I-2 Bremerton	66	E	22
I-3 Aberdeen-Hoquiam	82	E	20
I-4 Centralia-Chehalis	33	B	6
I-5 Olympia	70	D	10
I-6 Colfax	100	F	31
I-7 Yakima	100	F	28
I-8 Vancouver	97	D	16
I-9 Longview-Kelso	62	D	9
I-10 Bellingham	80	E	18
I-11 Mount Vernon	30	B	5
I-12 Walla Walla	88	D	11
I-13 Pasco-Kennewick	100	F	32
I-14 Wenatchee	100	F	29
R-1 Port Angeles	93	E	24
R-2 Port Townsend	59	C	8
R-3 Forks	72	D	12
R-4 Raymond-South Bend	96	E	25
R-5 Shelton	100	F	33
R-6 Coulee Dam	100	F	35
R-7 Colville	100	F	30
R-8 Tonasket-Republic	100	F	34
R-9 Davenport	29	B	4
R-10 Ritzville-Sprague	0	A	3
R-11 Ione	0	A	1
R-12 Sunnyside-Prosser	77	E	19
R-13 Ellensburg	81	D	14
R-14 Goldendale	79	D	17
R-15 Pomeroy	78	D	15
R-16 Connell	0	A	2
R-17 Brewster-Okanogan	100	F	27
R-18 Ephrata	90	D	13

① According to Federal law and regulations priority is determined on the basis of the percentage of need met considered in relation to the relative wealth, rural character, history of hospital usage and other characteristics of each hospital area.

Individual Project Priorities.

The priorities for individual projects will be established when the annual Project Construction Schedule is submitted. In determining the priority of individual projects the area priority is of major importance. Normally, projects in areas of lower priority will not be ranked higher than projects in areas of higher priority. However, this may be done if other priority principles are of such significance that the project in the area of lower priority is more urgently required in providing adequate hospital services for the people of the State.

The factors which are being considered in determining which project should be given the first opportunity for utilization of hospital construction funds include the

same criteria as are utilized in determining area priorities. The circumstances surrounding each proposed project will determine which factors are of greatest importance in each case. It has not been possible to make a comprehensive study of the entire State and so a detailed survey will be made of the individual communities as each project is presented. In some cases there is an acute need for facilities in the isolated portion of an area. This may be sufficient reason for giving preference to a specific project in an area otherwise of lower priority. Such special consideration may be necessary even though there did not seem to be sufficient justification for placing the whole area in a high priority position. Had the whole area been given a high priority this would have placed a priority on any project in the area even though the critical situation existed only in one portion thereof. Such a situation arises because in the interest of encouraging a functional cooperation among hospitals it was not thought desirable to consider each hospital community as an area. Each area can be considered a complete functional unit only if one or more hospitals contained therein can provide at least nearly complete facilities. Hence any area may have need for one or more complete hospitals as well as one or more community clinics or emergency hospitals.

In addition to utilization of the criteria as outlined for establishment of area priorities, in the consideration of individual projects preference will be given to the enlarging of existing facilities and in the construction of hospitals in areas where present facilities constitute a public hazard. Such communities have demonstrated their need and ability to operate a hospital. In areas without existing facilities careful investigation will be made of the availability of medical and other personnel to operate the hospital. The distribution of physicians and nurses within the State is presented in Chapter X. Except as stated above, priority will be given to initial installations in preference to replacements.

Chapter 4. Tuberculosis Hospitals

After a careful study of existing institutions, logical service areas, and related factors, it was found that five areas would probably be the best for tuberculosis hospital planning. (See Figure 16.) This involves a compromise between the present functional pattern and the ideal grouping of counties. The existing operative arrangements stem for the most part from 1938 when the State legislature passed laws providing that groups of counties may band together to operate sanatoriums and care for tuberculosis patients. Area delineation was made to conform to county lines inasmuch as sanatoria management and support is vested in the counties. According to State statute, since 1913, with the exception of the period from 1937 to 1943, the county commissioners have been charged with the responsibility for care of tuberculosis. The institutions are legally owned and operated by the counties but heavily subsidized by the State government operating through the State Department of Health. Each county contributes the return from a .6 mill special levy for tuberculosis hospital care, with all additional funds necessary coming from the general fund of the state. (See Table 14.)

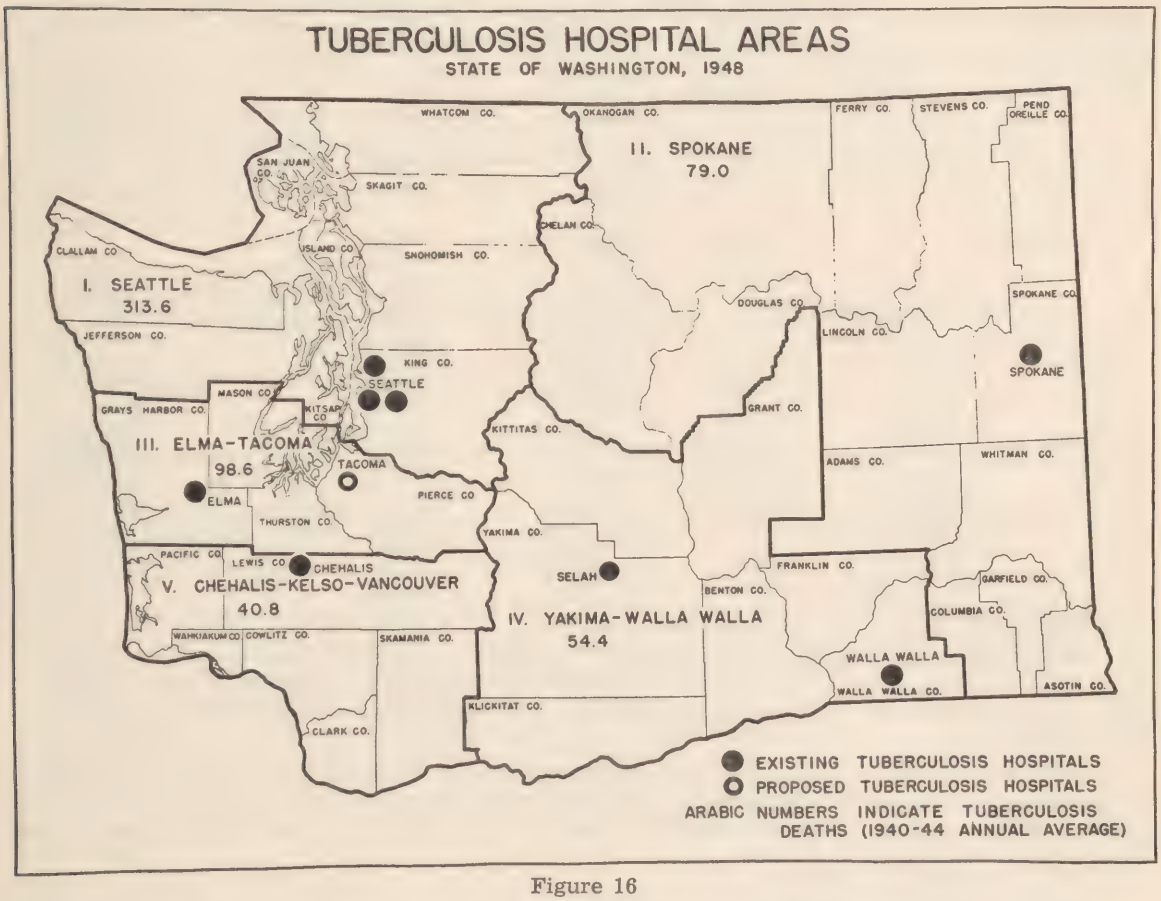

Figure 16

Utilizing existing enabling legislation, six counties of Southwestern Washington jointly own and operate the MacMillan Sanatorium. Likewise, six counties of South Central Washington have joined together to own and operate a hospital now under construction at Selah. By agreement and cooperation other counties may send their patients to any county institution when a vacancy is available. Therefore,

thirteen counties of Eastern Washington have agreed to send their patients to Edgecliff Sanatorium although this institution is owned and operated exclusively by Spokane County. Likewise, the plan is for patients, by agreement with the northwestern counties of the State, to enter central institutions for the Puget Sound Area at Seattle.

As with other chronic disease hospitals, planning for the care of tuberculosis patients is more a matter of providing satisfactory facilities conveniently located close to general hospitals rather than in having tuberculosis institutions widely scattered throughout the State. Patients are not frequently taken to tuberculosis hospitals with such haste that the distance traveled is an important factor, and enough patients must be available so that institutions can be of sufficient size to provide satisfactory service. The five areas designated are in accord with the intercounty groupings mentioned above and have been described as follows: Area I. Seattle (Puget Sound), Area II. Spokane (Inland Empire), Area III. Elma-Tacoma, Area IV. Yakima-Walla Walla (South Central Washington), and Area V. Chehalis-Kelso-Vancouver (Southwest Washington).

Table 12. POPULATION OF TUBERCULOSIS HOSPITAL AREAS AND COUNTIES INCLUDED THEREIN, STATE OF WASHINGTON

Tuberculosis Hospital Areas	*Area Population*①	*Counties in Area*	*County Population*①	*Counties in Area*	*County Population*①
I. Seattle	1,035,701	Clallam	23,785	San Juan	5,578
		Island	7,893	Skagit	46,518
		Jefferson	9,472	Snohomish	100,087
		King	692,502	Whatcom	65,250
		Kitsap	84,616		
II. Spokane	386,739	Adams	6,315	Lincoln	11,577
		Asotin	10,735	Okanogan	28,700
		Chelan	39,993	Pend Oreille	7,893
		Columbia	5,789	Spokane	209,119
		Douglas	8,946	Stevens	19,575
		Ferry	4,525	Whitman	30,520
		Garfield	3,052		
III. Elma-Tacoma	325,939	Grays Harbor	56,095	Pierce	215,433
		Mason	13,366	Thurston	41,045
IV. Yakima-Walla Walla	249,868	Benton	36,730	Klickitat	11,577
		Franklin	10,524	Walla Walla	32,731
		Grant	12,734	Yakima	121,103
		Kittitas	24,469		
V. Chehalis-Kelso-Vancouver	196,753	Clark	73,670	Pacific	16,313
		Cowlitz	53,411	Skamania	4,736
		Lewis	44,413	Wahkiakum	4,210
ALL AREAS	2,195,000				

① Based on the civilian population "Estimated Population of the State of Washington, by Counties and Cities as of July 1, 1947," prepared by Washington State Department of Health, Section of Public Health Statistics, and on "Current Population Reports," Series P-25, No. 4, as of July 1, 1947, Bureau of the Census, Department of Commerce.

There are now 12 tuberculosis hospitals (excluding Indian and veterans' hospitals) of which eight were judged to meet the minimum standards adopted for an acceptable hospital. At the present time there are 2,126 beds in the acceptable institutions (including the hospital now under construction at Selah), and 268 beds which are in institutions classified as not acceptable. A detailed description of the non-acceptable institutions is on file with the State Department of Health.

The average annual number of deaths from tuberculosis in the State of Washington for the five-year period 1940-1944 was found to be 586.4 deaths. (Deaths of tuberculosis patients in mental institutions are excluded.) According to the rules and regulations of the U. S. Public Health Service providing for two and one-half beds per annual death in each area, there would be a need for only 177 additional beds in the State, making a total of 1466 beds. While this must be adopted as the official ratio it has been estimated that with the present case-finding program and the known cases needing hospitalization, two and one-half beds per annual death is grossly inadequate to care for tuberculosis patients in this State. In the immediate future additional beds are being built which would then bring the total in use to approximately 2,265 or about 4 beds per average annual tuberculosis death. Proposed construction is as follows: Area III, a 200-bed institution to replace the Mountain View Sanatorium in Pierce County, and in Area V a building program which would make 102 beds available. A detailed description of existing hospitals, bed needs and plans by areas is on file with the State Department of Health. A summary of the bed needs is presented in Table 13.

The relative need for each area has been established on the basis of the per cent which existing acceptable hospital beds are to the number required to supply 2.5 beds per annual death as determined for the State Plan. Listed in ascending order of per cent of need met, the areas appear as follows: Tacoma 45.0 per cent, Chehalis 59.8 per cent, Seattle, Yakima, and Spokane 100 per cent. It is agreed that for the purposes of the State Plan the relative need as listed above constitutes the best basis for priority of projects and that there is sufficient difference between the per cent of need met in each area to justify basing priorities on this factor alone. As a matter of reference the population of each area and the counties included is presented herewith in Table 12.

Table 13.—TUBERCULOSIS HOSPITAL SUMMARY, STATE OF WASHINGTON, 1948

Tuberculosis Hospital Areas	*Average Annual TB Deaths*①	*Beds Allowed by USPHS Ratio*②	*Existing Acceptable Beds*	*Per cent of Need Met*	*Additional Beds Needed*
I. Seattle	313.6	784.0	1,550	100.0	...
II. Spokane	79.0	197.5	212	100.0	...
III. Elma-Tacoma	98.6	246.5	111	45.0	136
IV. Yakima-Walla Walla	54.4	136.0	192	100.0	...
V. Chehalis-Vancouver	40.8	102.0	61	59.8	41
ALL AREAS	586.4③	1,466.0	2,126	87.9	177

① For the fiscal period, 1940-1944 inclusive, excluding deaths in the State mental institutions.

② The standard established by the United States Public Health Service provides for tuberculosis hospital beds at the rate of 2.5 beds per annual average number of deaths from tuberculosis.

③ The total number of deaths for each year, excluding deaths in the mental institutions, is as follows: 1940—581; 1941—592; 1942—571; 1943—603; 1944—585.

Table 14—ASSESSED VALUE OF REAL AND PERSONAL PROPERTY AND FUNDS AVAILABLE FOR TUBERCULOSIS HOSPITALS BY AREAS AND COUNTIES, STATE OF WASHINGTON, 1947.

Tuberculosis Areas	*Counties*	*Assessed Property Values County Purposes*[1]	*Tuberculosis Levy .6 Mill*
I. Seattle	King	$425,715,577	$255,429
	Clallam	13,307,312	7,984
Assessed Value	Jefferson	5,022,879	3,014
$578,481,510	Kitsap	24,129,703	14,478
	San Juan	1,626,842	976
Levy .6 Mill	Whatcom	33,233,782	19,940
$347,088	Skagit	25,559,820	15,336
	Island	3,405,715	2,043
	Snohomish	46,479,880	27,888
II. Spokane	Okanogan	12,741,230	7,645
	Chelan	27,423,103	16,454
Assessed Value	Douglas	11,979,367	7,188
$297,853,197	Ferry	2,393,972	1,436
	Stevens	10,660,769	6,396
Levy .6 Mill	Pend Oreille	4,578,530	2,747
$178,712	Lincoln	22,381,239	13,429
	Spokane	129,250,814	77,551
	Adams	14,424,853	8,655
	Whitman	42,379,999	25,428
	Columbia	8,637,242	5,182
	Garfield	5,905,019	3,543
	Asotin	5,097,060	3,058
III. Elma-Tacoma	Grays Harbor	23,007,594	13,805
Assessed Value	Mason	6,696,978	4,018
$148,819,697	Thurston	20,691,537	12,415
Levy .6 Mill	Pierce	98,423,588	59,054
$89,292			
IV. Yakima-Walla Walla	Kittitas	17,788,736	10,673
	Grant	12,128,898	7,277
Assessed Value	Yakima	48,961,585	29,377
$146,256,407	Benton	14,007,416	8,405
	Klickitat	11,082,737	6,650
Levy .6 Mill	Franklin	10,729,644	6,438
$87,754	Walla Walla	31,557,391	18,934
V. Chehalis-Vancouver	Pacific	11,369,354	6,822
	Lewis	29,730,822	17,839
Assessed Value	Wahkiakum	2,015,290	1,209
$101,886,112	Cowlitz	24,907,489	14,944
Levy .6 Mill	Skamania	4,205,662	2,523
$61,132	Clark	29,657,495	17,795
TOTAL ALL AREAS		$1,273,296,923	$763,978

[1] From Exhibit "Statement of Taxes Due in 1947, Segregated by Funds, Functions, and Counties" (as reported by County Assessors), prepared by the Division of Municipal Corporations, Cliff Yelle, State Auditor, State of Washington.

Chapter 5. Mental Hospitals

Planning in this category has been done on a state-wide basis as the time and distance to the hospital are not so important when caring for a mentally ill patient. A few hours more or less are not usually a question of life and death. The population base, as for all parts of the State Plan, is the 1947 figure of 2,195,000 which is the latest official estimate of population made by the Bureau of the Census, U. S. Department of Commerce.

Including existing facilities a total of 10,975 beds are needed for care of the mentally ill when estimates are based on the rate of five beds per thousand population as required by the Rules and Regulations of the Surgeon General. If based on population the distribution of the beds throughout the State would be as shown in Table 15. In arriving at these estimates bed needs were divided between the two general categories of facilities: (1) State mental hospitals receiving only patients committed by the court, and (2) county, nonprofit and private institutions. The latter groups provide primarily short term care for intensive treatment of patients able to pay for such care, or act as receiving stations prior to commitment to the State mental hospital. For purposes of estimation, 95 per cent of the beds were assumed to be needed in the State mental institutions and five per cent in the remaining. On this basis 10,424 beds would be needed in the State mental hospitals and 551 in the other institutions. The need in the State mental hospitals was further subdivided on the assumption that 92 per cent of the total is needed for general mental illness and that three per cent is the need for care of the criminally insane. Since treatment for the criminally insane is at present available only at Eastern State Hospital and it now receives this type of patient from all counties in the State, the entire three per cent devoted to this class of patient is apportioned to Eastern Washington. Of the 3,416 beds shown as the need in this portion of the State, 328 beds represent the estimated need for the criminally insane assigned to this area from the entire State.

At the present time 7,455 beds are being used for the care of the mentally ill the distribution of which is shown in Table 15. This number includes beds in use beyond normal capacity as well as beds in unacceptable buildings. Excluded, however, are the 996 beds now under construction at the Eastern and Western State Hospitals. At the present time a large number of beds in the State mental hospitals are filled with senile patients which could be cared for elsewhere were facilities available.

Because of the shortage of beds in many cases it has been found necessary to put more beds than desirable in a given room or ward as well as placing patients in areas not designed or equipped for their care. The minimum area of floor space for satisfactory care of patients has been variously estimated as from 70 to 100 or more square feet per patient. In those cases where space is now being used in excess of maximum desirable capacity the extra beds are classified as unacceptable. Likewise, any beds in buildings not meeting minimum standards are classified as unacceptable beds.

Including those under construction, there are now 6,065 acceptable beds available. Of these beds in buildings which meet the physical standards established 5,796 are located in the three State mental hospitals and 269 are in general hospitals, private mental hospitals and psychiatric nursing homes. A list of the institutions, with the number of acceptable and unacceptable beds in each, together with patient statistics, is on file in the offices of the State Department of Health.

In order to bring the number of acceptable beds up to the total of 10,975 recommended, it therefore is necessary for the State to have an additional 4,910 beds for

the care of the mentally ill. The State Supervisor of Public Institutions indicates that in consideration of existing facilities at the three State mental institutions, the best planning would be to provide approximately an equal number of additional beds in each of the State hospitals provided that at least 1,000 bed units be built. As a means of determining where these beds should be allocated reference is made to the Survey Schedules which indicate that the service area for the Eastern State Hospital is that portion of the State east of the Cascade Mountains, that the Northern State Hospital receives patients mostly from the nine northwestern counties, and the Western State Hospital serves primarily the southwestern portion of the State.

Table 15. MENTAL HOSPITAL SUMMARY, STATE OF WASHINGTON, 1948

Portion of State	*Population*①	*Beds Needed at 5 Beds per 1000*	*Beds In Use*	*Existing Acceptable Beds*	*Additional Beds Needed*
Northwestern	689,450	3,344	2,258	1,686	1,658
Southwestern	868,943	4,215	3,042	2,508②	1,707
Eastern	636,607	3,416	2,155	1,871③	1,545
TOTAL	2,195,000	10,975	7,455	6,065	4,910

① Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by the Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

② Includes 496 beds in units now being constructed at Western State Hospital.

③ Includes 500 beds in units now being constructed at Eastern State Hospital.

For purposes of the State Plan 1,580 additional beds are tentatively recommended for the Western State Hospital, 1,610 for the Northern State Hospital, and 1,440 for the Eastern State Hospital. The remaining 280 beds are suggested for hospitals other than State institutions which may offer a satisfactory plan for the care of mental patients. No specific geographic allocation is suggested for beds outside of the State mental institutions as insufficient information is available as to the need in specific locations. It should, however, be noted that central Washington at present has no facilities for the care of mental patients. It would be highly desirable if a ward for such care could be established in a general or special hospital in this area. Consideration must be given, however, to the availability of adequately trained medical personnel for these cases. It is recommended that preference be given to those hospitals having facilities designed primarily to give intensive treatment for a short period during the early phases of a mental disorder. Such a policy would provide greater benefit to patients in need of mental hospitalization.

Chapter 6. Chronic Disease Hospitals

Modern, adequate treatment of the chronically ill requires that the patients have ready access to adequate surgical and treatment facilities. For this reason in determining areas for chronic disease hospitals it was deemed desirable to relate them to general hospitals. Chronic disease patients, however, have not the same urgency to reach the chronic facility as has the acutely ill patient the general hospital and for this reason the service area may be larger. For the purpose of planning for the care of the chronically ill, therefore, the State was divided into ten areas each of which contained two or more general hospital service areas. In order of decreasing population, the areas designated are as follows: I. Seattle, II. Tacoma, III. Spokane (Northeastern), IV. Everett-Bellingham (North Coast), V. Yakima (South Central), VI. Vancouver, VII. Walla Walla (Southeastern), VIII. Wenatchee (North Central), IX. Aberdeen (South Coast), and X. Port Angeles (Olympic Peninsula). (See Figure 17 and Table 17.)

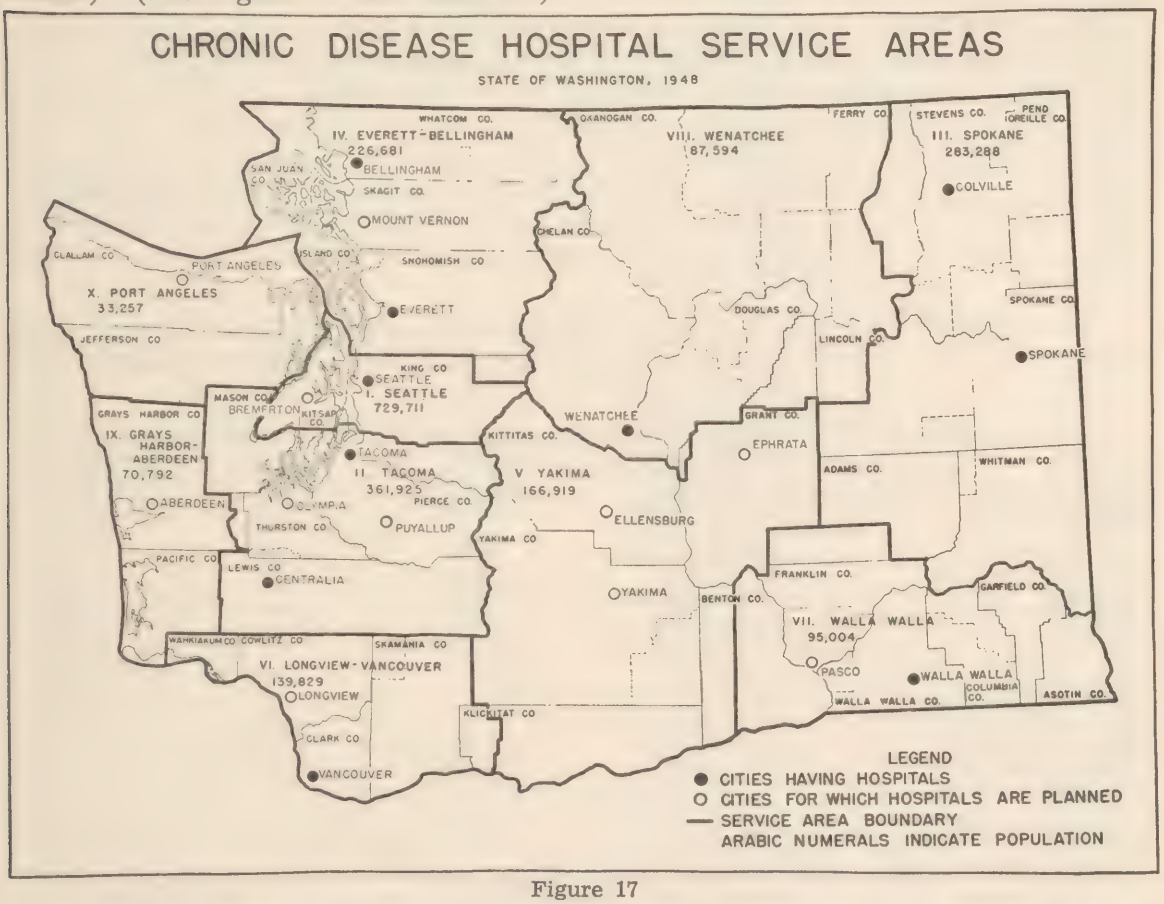

Figure 17

Areas I, II and III include base hospital facilities while the seven remaining areas can send patients to intermediate facilities without difficulty. It is recognized that care of the chronically ill is best provided for when facilities are adjacent to or part of a general hospital plant, one or more of which are located in each area.

In determining which institutions should be listed as chronic disease hospitals, there was considerable difficulty encountered in defining what constitutes a chronic disease hospital. Classification as to the nature of the disease has been found unsatisfactory except in the case of those with tuberculosis or mental illness, each of which is given special consideration.

Advancing age in itself does not necessarily bring chronic illness and the problem of providing for the aged is quite distinct from caring for the chronically ill. It was reported in the January 17, 1948, issue of the Journal of the American Medical Association that in an extensive study in the Chicago area only eight per cent of those over 65 years of age were chronically ill although these persons constituted two-thirds of the chronically ill requiring institutional care. Even institutional care encompasses more than hospitalization and varies from merely board and room to care utilizing the most complete diagnostic and surgical procedures known to the large modern hospital.

The definition therefore must not be based on the disease or the age of the patient but rather on the type of care required. According to the federal regulations a Chronic Disease Hospital is defined as one "the primary purpose of which is medical treatment of chronic illness, including the degenerative diseases, and which furnishes hospital treatment and care, administered by or under the direction of persons licensed to practice medicine in the State."

From this definition it therefore is apparent that all institutions herein classified as chronic disease hospitals must have personnel and facilities to provide medical treatment and admit patients for such care. Specifically only those nursing homes and hospitals were classified as chronic disease hospitals which: (1) were over five beds in size; (2) did not restrict admission to ambulatory cases; and (3) had some satisfactory sterilization equipment, or a reasonable number of registered nurses employed. In so defining a chronic disease hospital, more than 2,000 beds in nursing homes and innumerable beds in boarding homes have been eliminated from the count.

An analysis of the chronic disease hospital buildings in the State using the same criteria for acceptable facilities as was used for general hospitals indicates that out

Table 16. CHRONIC DISEASE HOSPITAL SUMMARY, STATE OF WASHINGTON, 1948

Chronic Disease Hospital Areas	*Beds Needed at 2 Beds per 1,000*①	*Existing Acceptable Beds*②	*Per Cent of Need Met*	*Additional Beds Needed*
I. Seattle	1,459	428	29	1,031
II. Tacoma	724	353	49	371
III. Spokane	567	298	53	269
IV. Everett	453	162	36	291
V. Yakima	334	14	4	320
VI. Vancouver	280	44	16	236
VII. Walla Walla	190	37	19	153
VIII. Wenatchee	175	56	32	119
IX. Aberdeen	142	0	0	142
X. Port Angeles	66	0	0	66
ALL AREAS	4,390	1,392	32	2,998

① Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by the Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

② Excludes over 700 beds in State mental hospitals customarily used for care of chronic disease or senile patients as well as more than 2,000 beds in nursing homes.

of the 2,671 beds (exclusive of those in State mental institutions not open to the general public) now being used for the chronically ill in the State of Washington, 1,279 could by no reasonable criteria be considered satisfactory facilities, and only 1,392 beds were determined to be in institutions of sufficiently high quality to be

classified as acceptable institutions. In application of the criteria established for what constitutes an institution providing acceptable beds, the home or hospital was classed as non-acceptable if the physical plant: (1) is a frame building more than one story in height; (2) is between 5 and 10 beds in size and was neither built as a nursing home or hospital nor is of fire resistant construction; or (3) by reason of its location, or the site, age, fire hazard, poor internal arrangement, lack of proper facilities or personnel, or any combination of these factors it has been deemed to be unsatisfactory for usage as a chronic disease hospital. A description of the non-acceptable hospitals is on file in the office of the State Department of Health.

Table 17. POPULATION OF CHRONIC DISEASE HOSPITAL AREAS AND SERVICE AREAS FOR GENERAL HOSPITALS INCLUDED IN EACH CHRONIC DISEASE AREA, STATE OF WASHINGTON, 1947

Chronic Disease Hospital Areas	*Area Population*①	*Service Areas for General Hospitals*		*Area Population*①
I. Seattle	729,711	B-1	Seattle	643,982
		I-2	Bremerton	85,729
II. Tacoma	361,925	B-2	Tacoma	262,598
		I-4	Centralia-Chehalis	46,258
		I-5	Olympia	40,816
		R-5	Shelton	12,253
III. Spokane	283,288	B-3	Spokane	216,961
		I-6	Colfax	30,151
		R-7	Colville	17,156
		R-9	Davenport	9,001
		R-10	Ritzville-Sprague	7,052
		R-11	Ione	2,967
IV. Everett-Bellingham	226,681	I-1	Everett	102,481
		I-10	Bellingham	65,250
		I-11	Mount Vernon	58,950
V. Yakima	166,919	I-7	Yakima	102,387
		R-12	Sunnyside-Prosser	24,022
		R-13	Ellensburg	24,469
		R-14	Goldendale	7,775
		R-18	Ephrata	8,266
VI. Vancouver	139,829	I-8	Vancouver	82,197
		I-9	Longview-Kelso	57,632
VII. Walla Walla	95,004	I-12	Walla Walla	37,352
		I-13	Pasco-Kennewick	39,862
		R-15	Pomeroy	14,797
		R-16	Connell	2,993
VIII. Wenatchee	87,594	I-14	Wenatchee	46,936
		R-6	Coulee Dam	12,725
		R-8	Tonasket-Republic	11,270
		R-17	Brewster-Okanogan	16,663
IX. Aberdeen	70,792	I-3	Aberdeen-Hoquiam	54,479
		R-4	Raymond-South Bend	16,313
X. Port Angeles	33,257	R-1	Port Angeles	19,050
		R-2	Port Townsend	9,189
		R-3	Forks	5,018
ALL AREAS	2,195,000			2,195,000

① Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by Washington State Department of Health, Section of Public Health Statistics, and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

In all cases it was felt that a lenient interpretation would tend to point up the areas of greatest need. Admittedly many institutions classified as acceptable are far from desirable but the replacing of the least satisfactory should be the first task.

A total of 4,390 chronic disease hospital beds are needed in the State of Washington if estimates are based on the rate of two beds per thousand population, as suggested by the Rules and Regulations of the Surgeon General. Existing acceptable beds more nearly meet the needs in some areas than in others and certain areas have no acceptable beds at all. The percentage of need met varies from zero in those areas having no acceptable hospital to a little over 50 per cent where the most beds are available. Listed in ascending order or percentage of need met, the areas are as follows: X. Port Angeles (Olympic Peninsula), none; IX. Aberdeen (South Coast), none; V. Yakima (South Central), four per cent; VI. Vancouver, 16 per cent; VII. Walla Walla (Southeastern), 19 per cent; I. Seattle, 29 per cent; VIII. Wenatchee (North Central), 32 per cent; IV. Everett-Bellingham (North Coast), 36 per cent; II. Tacoma, 49 per cent; and III. Spokane (Northeastern), 53 per cent. (See Table 16.)

In determining in which areas chronic disease hospitals should be built first, it would appear that in most cases there is sufficient difference between the percentage of need met in each area to justify basing priorities on this factor alone. Since the Port Angeles and Aberdeen areas have no acceptable facilities and the Aberdeen area is not so isolated, preference should be given to Port Angeles. The two areas are very similar in wealth and population characteristics.

In all cases where additional beds are needed they are recommended for the general hospital area center if possible. If the size of the hospitals at the area center would not justify so large a chronic disease unit then two units are recommended, one in the area center and one at a community hospital center in the same region. The detailed recommendations are on file in the office of the State Department of Health.

Chapter 7. Public Health Centers

In planning for full-time health departments covering the entire State, the 39 counties have been grouped into 22 areas which after considerable study seem the most logical to provide local health services for all the people.

County units were used as the basis for planning as local government units are responsible for the administration of health departments, and financial support is derived from local taxation together with subsidies from the State and Federal governments. State law provides that only counties or large first-class cities may have

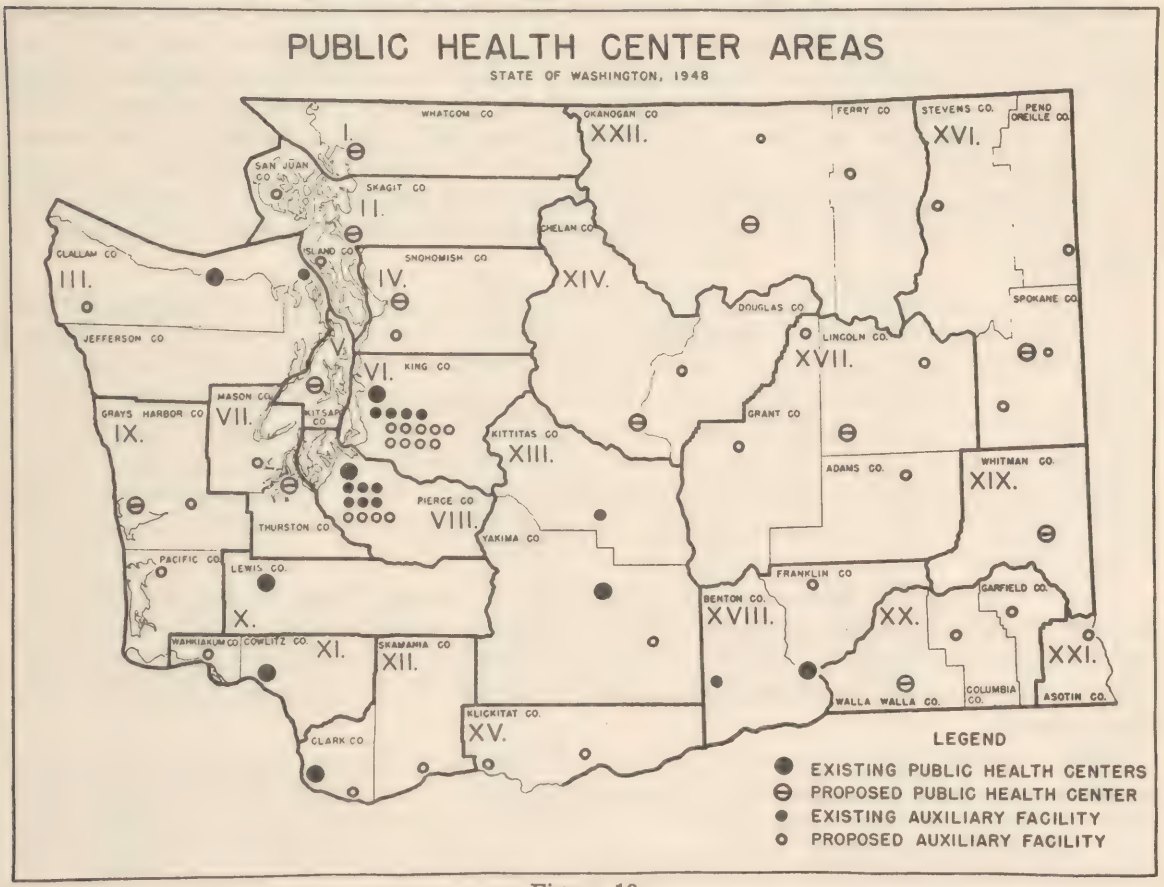

Figure 18

independent health departments, and so a single county and a city or a combination of counties and cities must be the basis for planning. The law further requires that each county shall levy and budget as a minimum for public health purposes the proceeds from a .4 mill annual levy although no such legal requirement is placed upon first-class cities. All second, third and fourth-class cities may, if their charters so designate, appoint a health officer and other assistants but they are subject to supervision by the local county board of health. (See Table 18 for an approximation of the annual revenue from local taxation.)

The grouping of the counties into public health areas has been arrived at by utilizing the following criteria:

(1) Each area shall have a population of at least 50,000 wherever possible, as recommended by the Sub-committee on Administrative Practice of the American Public Health Association.

(2) If possible the periphery of the area shall not be more than 45 miles from the headquarters of the department.

(3) Since State law makes each county and first-class city (city of 20,000 population or more operating under a first-class charter) locally autonomous, suggested groupings are based on these existing legal units.

(4) Adequate transportation facilities are available providing accessibility to all parts of the area.

There are now five full-time local health departments with reasonably satisfactory physical facilities and three facilities are under construction. These eight are therefore classified as acceptable public health centers. This means there is one acceptable center for 274,000 persons. In accordance with the areas proposed, it is recommended that there be constructed 12 additional public health centers, which makes a total of 20 public health centers. Two interstate areas are planned with their centers outside the State. As planned there will be an average of one center for each 110,000 persons. In addition, there are 13 acceptable auxiliary facilities now in existence, and it is recommended that 41 additional auxiliary facilities be constructed, in order that adequate public health care be available to all people in each area.

Which areas should receive first assistance in building adequate housing for the local health departments is determined primarily by criteria set forth in the Hospital Survey and Construction Act and the Rules and Regulations of the Surgeon General. The regulations state that "Highest priority in the category shall be given to provision of facilities for local health units serving rural communities in areas of relatively small financial resources." The instructions for preparing the State Plan from the U. S. Public Health Service state in addition that "It is recommended that public health centers be planned only in areas which have or will have full-time health officers."

As a first step in determining which of the 22 areas should have first priority, the areas were divided into three groups: I. Those already having full-time health departments and acceptable health centers. II. Those with full-time health departments without satisfactory health centers. And III. Those without full-time health departments.

The priority has been determined for the areas within each group on the basis of the per cent of the population served which is rural, the relatively small local financial resources, and such factors as local interest and unusual public health problems. The rural character of the population and the relative lack of financial resources were given equal weight in the priority determination. Financial resources have been determined on the basis of the assessed value per capita of real and personal property. This real and personal property would be the base for issuance of bonds for construction as well as tax assessments for support of a health center. (See Tables 18 and 19.)

Except in those areas with special problems, the priority of each area was based entirely on the relative lack of financial resources and rural character of the population. Those areas where special conditions exist were assigned a higher priority for the reason given. Only group II areas, those with full-time health departments without acceptable centers, were considered in determining the priority for allocation of funds for health center construction. Those in group I already have acceptable housing, and the ones in group III are not ready for a building until a full-time health department is organized.

Listed according to their priority as explained above, the public health center areas are eligible for assistance in the following order: XXII. Okanogan-Ferry, IV.

Snohomish-Everett, VII. Mason-Thurston, XIV. Chelan-Douglas, IX. Grays Harbor-Pacific-Aberdeen, I. Whatcom-Bellingham, XVI. Spokane-Stevens-Pend Oreille, XIX. Whitman, XX. Walla Walla-Columbia-Garfield, and V. Kitsap-Bremerton.

The priority of auxiliary facilities follows the same pattern as that for the primary centers, but only those in group I are eligible as no auxiliary facility will be built prior to the construction of a satisfactory center. Branch office facilities give a more complete service than clinics and hence are given first consideration. The priority for auxiliary facilities is therefore as follows: XIII. Yakima - Kittitas, XII. Clark-Vancouver-Skamania, III. Clallam-Jefferson, XI. Cowlitz-Wahkiakum, XVIII. Franklin-Benton, VIII. Pierce-Tacoma, and VI. King-Seattle.

The proposed locations of health centers and auxiliary facilities within the areas is shown on Figure 18. A description of the existing acceptable and unacceptable facilities, and their relative position as determined on the basis of wealth and rural character of the population, together with the special priority justifications is on file with the State Department of Health.

Table 18. ASSESSED VALUE OF REAL AND PERSONAL PROPERTY AND FUNDS FOR HEALTH PURPOSES, PUBLIC HEALTH CENTER AREAS, STATE OF WASHINGTON, 1947

Health Center Areas	*Assessed Value of Property*①	*Average Per Capita Valuation*②	*Per cent of State Average $580*	*Public Health Levy .4 Mill*
I. Whatcom-Bellingham ..	$33,233,782	$509	88	$13,294
II. Skagit-San Juan-Island	30,592,377	510	88	12,237
III. Clallam-Jefferson	18,330,191	551	95	7,332
IV. Snohomish-Everett	46,479,880	464	80	18,592
V. Kitsap-Bremerton	24,129,703	285	48	9,652
VI. King-Seattle	425,715,577	615	106	170,286
VII. Mason-Thurston	27,388,515	503	87	10,955
VIII. Pierce-Tacoma	98,423,588	457	79	39,369
IX. Grays Harbor-Aberdeen-Pacific	34,376,948	475	82	13,751
X. Lewis	29,730,822	669	115	11,892
XI. Cowlitz-Wahkiakum ...	26,922,779	467	81	10,769
XII. Clark-Vancouver-Skamania	33,863,157	432	74	13,545
XIII. Yakima-Kittitas	66,750,321	459	79	26,700
XIV. Chelan-Douglas	39,402,470	805	139	15,761
XV. Klickitat-Wasco (Ore.) .	11,082,737	957	165	4,433
XVI. Spokane-Stevens-Pend Oreille	144,490,113	611	105	57,796
XVII. Grant-Lincoln-Adams	48,934,990	1,598	275	19,574
XVIII. Benton-Franklin	24,737,060	523	90	9,895
XIX. Whitman	42,379,999	1,389	239	16,952
XX. Walla Walla-Columbia-Garfield	46,099,652	1,109	191	18,440
XXI. Asotin-Nez Perce (Idaho)	5,097,060	475	82	2,039
XXII. Okanogan-Ferry	15,135,202	456	79	6,054
ALL HEALTH UNITS .	$1,273,296,923	580	100	$509,319

① Excludes out-of-state portion of proposed interstate areas. From Exhibit "Statement of Taxes Due in 1947, Segregated by Funds, Functions and Counties" (as reported by County assessors), prepared by the Division of Municipal Corporations, Cliff Yelle, State Auditor, State of Washington.

② Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

Table 19. POPULATION CHARACTERISTICS OF PUBLIC HEALTH CENTER AREAS, STATE OF WASHINGTON, 1947[1]

Health Center Areas	*Population*	*Area in Square Miles*	*Population Density*	*Rural Population[2]*	*Per cent Rural*
I. Whatcom-Bellingham	65,250	2,151	30	31,047	48
II. Skagit-San Juan-Island	59,989	2,113	28	43,992	73
III. Clallam-Jefferson	33,257	3,565	9	15,050	45
IV. Snohomish-Everett	100,087	2,100	48	59,989	60
V. Kitsap-Bremerton	84,616	402	210	44,939	53
VI. King-Seattle	692,502	2,136	324	165,601	24
VII. Mason-Thurston	54,411	1,686	32	33,099	61
VIII. Pierce-Tacoma	215,433	1,680	128	61,778	29
IX. Grays Harbor-Pacific-Aberdeen	72,408	2,830	26	33,836	47
X. Lewis	44,413	2,447	18	30,573	69
XI. Cowlitz-Wahkiakum	57,621	1,415	41	30,521	53
XII. Clark-Vancouver-Skamania	78,406	2,309	34	45,570	58
XIII. Yakima-Kittitas	145,572	6,588	22	91,720	63
XIV. Chelan-Douglas	48,939	4,772	10	35,257	72
XV. Klickitat-Wasco (Ore.)	11,577	1,912	6	11,577	100
XVI. Spokane-Stevens-Pend Oreille	236,587	5,690	42	78,659	33
XVII. Grant-Lincoln-Adams	30,626	6,989	4	30,626	100
XVIII. Benton-Franklin	47,254	3,000	16	19,365	41
XIX. Whitman	30,520	2,167	14	21,291	70
XX. Walla Walla-Columbia-Garfield	41,572	2,862	15	14,524	35
XXI. Asotin-Nez Perce (Idaho)	10,735	627	17	6,525	61
XXII. Okanogan-Ferry	33,225	7,536	4	29,679	89
ALL HEALTH UNITS	2,195,000	66,977	33	939,218	43

[1] Excludes out-of-state portion of proposed interstate areas. Population based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

[2] Rural refers to population not living in urban centers of 2,500 or more persons in 1947.

Chapter 8. Medical and Nursing Personnel

While not a required part of the official Plan, it was felt desirable to present a brief sketch of the situation concerning medical and nursing personnel. The services of these persons are essential to the operation of hospitals and their availability must be considered in any plan for expanded hospital facilities.

Medical Personnel

In making the preliminary community survey, not only the total number of physicians but their qualifications and specialties should be appraised. As an example it may be clearly seen that it would be foolish to build a hospital with complete surgical facilities without some reasonable advance expectation that competent surgeons would be available to perform operations. A study of their age will give a basis for estimating future service important in any long-range analysis. Representatives of the medical profession indicate that one physician is needed for each 1,000 persons and that 10,000 or more persons are required to furnish sufficient patients to attract a specialist. Two of the specialties most necessary are those of surgery and obstetrics. Other basic specialties include internal medicine, women's surgery, children's diseases and diseases of the eye, ear, nose and throat. A community of 20,000 to 25,000 population might expect to have 18 to 20 active physicians of whom three to five would be qualified specialists. It would still be necessary to rely on some larger community for professional services in the more limited specialties.

Statistical tabulations show that of the 2,400 physicians licensed in the State in 1947 only approximately 1,650 were in active practice. Of this number 282 are over 65 years of age and so are reaching the end of their productive years. (See Table 21.) In relation to population there are 1,333 persons per physician or .75 physicians per 1,000 population. From this it may be seen that the State as a whole has fewer than the minimum requirement as stated above. Furthermore, there is an unequal distribution within the State, there being a relatively greater supply in some areas than others. In eight hospital service areas there are less than 1,500 persons per physician and in 10 areas there are more than 2,500 persons per physician. (See Table 20.)

Nursing Personnel

Once admitted to a hospital, it is the nurse's responsibility that the patient receives adequate care as prescribed by the physician. Good care would require at least one general duty nurse for each three hospital beds. This is based on the assumptions that (1) each patient should receive two and one-half hours' nursing service each day; (2) nurses work a 40-hour week and receive a 14-day vacation per year; and (3) the hospital will have 75 per cent occupancy. If, for example, a 60-bed hospital is planned 20 general duty nurses should be available in addition to specialized and supervisory nursing personnel.

In 1947 there were 12,235 nurses registered in the State of Washington. Of these on February 14, 1947, there were known to be 8,015 living in the State, many of whom are not nursing. The State Department of Licenses reports that by July 30, 1948, the total number registered had increased to 12,683 of which, according to a survey by the Washington State Nurses' Association[1], more than 2,391 were retaining their Washington registrations but living outside the State. Of the 7,142 known to be living in the State in 1948, 2,566 were not employed as nurses, leaving 4,576 or 64 per cent of those living in the State of Washington who were actively engaged in nursing.

[1] "Nursing Service Survey" by Lillian B. Patterson, Chairman, Washington State Nurses' Association, Special Committee on Nursing Services, mimeographed report.

Carrying the analysis still further, it was found that 2,393 nurses or about one-half (52.3%) of those known to be engaged in nursing were employed in the institutional field, a greater number than in all other fields of nursing. This means, however, that less than one-fifth of the 12,683 registered nurses in the State are available for nursing in the various hospitals.

The distribution within the State of registered nurses with Washington addresses is presented in Table 22.

Table 20.—PHYSICIANS IN PRIVATE PRACTICE IN RELATION TO POPULATION BY SERVICE AREAS FOR GENERAL HOSPITALS, STATE OF WASHINGTON, 1947①

Hospital Service Areas	*Population of Service Areas②*	*Number of Physicians*	*Physicians per 1000 Population*	*Persons per Physician*
B-1 Seattle	643,982	684	1.06	941
B-2 Tacoma	262,598	180	.69	1,459
B-3 Spokane	216,961	189	.87	1,148
I-1 Everett	102,481	56	.55	1,830
I-2 Bremerton	85,729	50	.58	1,715
I-3 Aberdeen-Hoquiam	54,479	30	.55	1,816
I-4 Centralia-Chehalis	46,258	22	.48	2,103
I-5 Olympia	40,816	33	.81	1,237
I-6 Colfax	30,151	25	.83	1,206
I-7 Yakima	102,387	64	.63	1,600
I-8 Vancouver	82,197	47	.57	1,749
I-9 Longview-Kelso	57,632	23	.40	2,506
I-10 Bellingham	65,250	46	.70	1,418
I-11 Mount Vernon	58,950	28	.47	2,105
I-12 Walla Walla	37,352	30	.80	1,245
I-13 Pasco-Kennewick	39,862	12	.30	3,322
I-14 Wenatchee	46,936	35	.75	1,341
R-1 Port Angeles	19,050	10	.52	1,905
R-2 Port Townsend	9,189	4	.44	2,297
R-3 Forks	5,018	1	.20	5,018
R-4 Raymond-South Bend	16,313	6	.37	2,719
R-5 Shelton	12,253	5	.41	2,451
R-6 Coulee Dam	12,725	7	.55	1,818
R-7 Colville	17,156	9	.52	1,906
R-8 Tonasket-Republic	11,270	4	.35	2,818
R-9 Davenport	9,001	4	.44	2,250
R-10 Ritzville	7,052	3	.43	2,351
R-11 Ione	2,967	1	.34	2,967
R-12 Sunnyside-Prosser	24,022	6	.25	4,000
R-13 Ellensburg	24,469	15	.61	1,631
R-14 Goldendale	7,775	4	.51	1,944
R-15 Pomeroy	14,797	4	.27	3,699
R-16 Connell	2,993	1	.33	2,993
R-17 Brewster-Okanogan	16,663	5	.30	3,333
R-18 Ephrata	8,266	4	.48	2,067
ALL AREAS	2,195,000	1,647	.75	1,333

① From data obtained in the survey conducted by the American Academy of Pediatrics in cooperation with the State Department of Health.

② Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by the Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

Table 21.—PHYSICIANS BY AGE GROUPS AND HOSPITAL SERVICE AREAS, STATE OF WASHINGTON, 1947 [1]

Hospital Service Areas	Physicians in Active Practice by Age Groups 25-34	35-44	45-54	55-64	65 and Over	Others[2]	All Physicians
B-1 Seattle	74	226	155	107	121	398	1,081
B-2 Tacoma	23	56	42	36	23	90	270
B-3 Spokane	13	67	44	23	41	62	250
I-1 Everett	5	13	14	11	12	11	66
I-2 Bremerton	14	22	8	1	5	21	71
I-3 Aberdeen-Hoquiam	3	9	6	8	5	12	43
I-4 Centralia-Chehalis	4	8	2	2	6	6	28
I-5 Olympia	5	8	7	6	4	14	44
I-6 Colfax	6	9	1	6	3	8	33
I-7 Yakima	5	27	6	15	9	11	73
I-8 Vancouver	7	20	9	4	7	42	89
I-9 Longview-Kelso	0	9	7	5	2	6	29
I-10 Bellingham	4	10	11	9	11	8	53
I-11 Mount Vernon	2	3	9	6	8	13	41
I-12 Walla Walla	1	6	7	11	4	6	35
I-13 Pasco-Kennewick	3	6	0	3	0	22	34
I-14 Wenatchee	5	11	10	4	5	6	41
R-1 Port Angeles	2	2	5	0	1	7	17
R-2 Port Townsend	0	4	0	0	0	2	6
R-3 Forks	0	0	0	1	0	0	1
R-3 Raymond-South Bend	1	2	0	0	3	2	8
R-5 Shelton	0	1	3	1	0	1	6
R-6 Coulee Dam	0	5	1	1	0	1	8
R-7 Colville	0	3	4	1	1	2	11
R-8 Tonasket-Republic	2	2	0	0	0	0	4
R-9 Davenport	0	1	1	1	1	1	5
R-10 Ritzville-Sprague	1	1	1	0	0	2	5
R-11 Ione	1	0	0	0	0	0	1
R-12 Sunnyside-Prosser	0	2	1	2	2	5	12
R-13 Ellensburg	5	5	1	1	3	1	16
R-14 Goldendale	2	1	0	1	0	2	6
R-15 Pomeroy	0	0	1	0	3	1	5
R-16 Connell	0	0	0	0	1	0	1
R-17 Brewster-Okanogan	2	0	3	0	0	5	10
R-18 Ephrata	2	1	0	0	1	1	5
ALL AREAS	192	540	359	266	282	769	2,408

[1] From data secured in the survey conducted by the American Academy of Pediatrics in cooperation with the State Department of Health. Excludes 164 osteopathic physicians and 218 chiropractors.

[2] Includes 153 who have died, moved or retired, 68 in armed forces, 100 in hospitals, 246 in public health work, 194 for whom there was no information and 8 of unknown age.

Table 22.—NURSES IN RELATION TO POPULATION BY SERVICE AREAS FOR GENERAL HOSPITALS, STATE OF WASHINGTON, 1947

Hospital Service Areas	*Population of Service Areas*[2]	*Number of Nurses*[1]	*Nurses Per 1000 Population*	*Persons Per Nurse*
B-1 Seattle	643,982	2,930	4.55	220
B-2 Tacoma	262,598	1,104	4.20	238
B-3 Spokane	216,961	817	3.77	266
I-1 Everett	102,481	355	3.46	289
I-2 Bremerton	85,729	233	2.72	368
I-3 Aberdeen-Hoquiam	54,479	167	3.07	326
I-4 Centralia-Chehalis	46,258	84	1.82	551
I-5 Olympia	40,816	124	3.04	329
I-6 Colfax	30,151	115	3.81	262
I-7 Yakima	102,387	295	2.88	347
I-8 Vancouver	82,197	205	2.49	401
I-9 Longview-Kelso	57,632	133	2.31	433
I-10 Bellingham	65,250	249	3.82	262
I-11 Mount Vernon	58,950	187	3.17	315
I-12 Walla Walla	37,352	206	5.52	181
I-13 Pasco-Kennewick	39,862	141	3.54	283
I-14 Wenatchee	46,936	147	3.13	319
R-1 Port Angeles	19,050	85	4.46	224
R-2 Port Townsend	9,189	29	3.16	317
R-3 Forks	5,018	5	1.00	1,004
R-4 Raymond-South Bend	16,313	26	1.59	627
R-5 Shelton	12,253	43	3.51	285
R-6 Coulee Dam	12,725	40	3.14	318
R-7 Colville	17,156	33	1.92	520
R-8 Tonasket-Republic	11,270	30	2.66	376
R-9 Davenport	9,001	16	1.78	563
R-19 Ritzville	7,052	14	1.99	504
R-11 Ione	2,967	7	2.36	424
R-12 Sunnyside-Prosser	24,022	34	1.42	707
R-13 Ellensburg	24,469	73	2.98	335
R-14 Goldendale	7,775	6	.77	1,296
R-15 Pomeroy	14,797	12	.81	1,233
R-16 Connell	2,993	7	2.34	428
R-17 Brewster-Okanogan	16,663	39	2.34	427
R-18 Ephrata	8,266	24	2.90	344
ALL AREAS	2,195,000	8,015	3.65	274

[1] Registered nurses with Washington addresses as of February 15, 1947, from data supplied by the State Department of Licenses.

[2] Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by the Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

Chapter 9. Administration of the State Hospital Plan

Designation of the State Agency.

In Washington, as in most states, the Health Department is the sole agency designated to administer the State Hospital Plan. In order to carry on the work of conducting the Hospital Survey and preparing the State Hospital Plan, the Hospital Planning and Development Section has been organized as a permanent Section within the Division of Central Administration of the State Department of Health. The exact functional relationship with the remainder of the Health Department is shown on the accompanying organization chart (Figure 19).

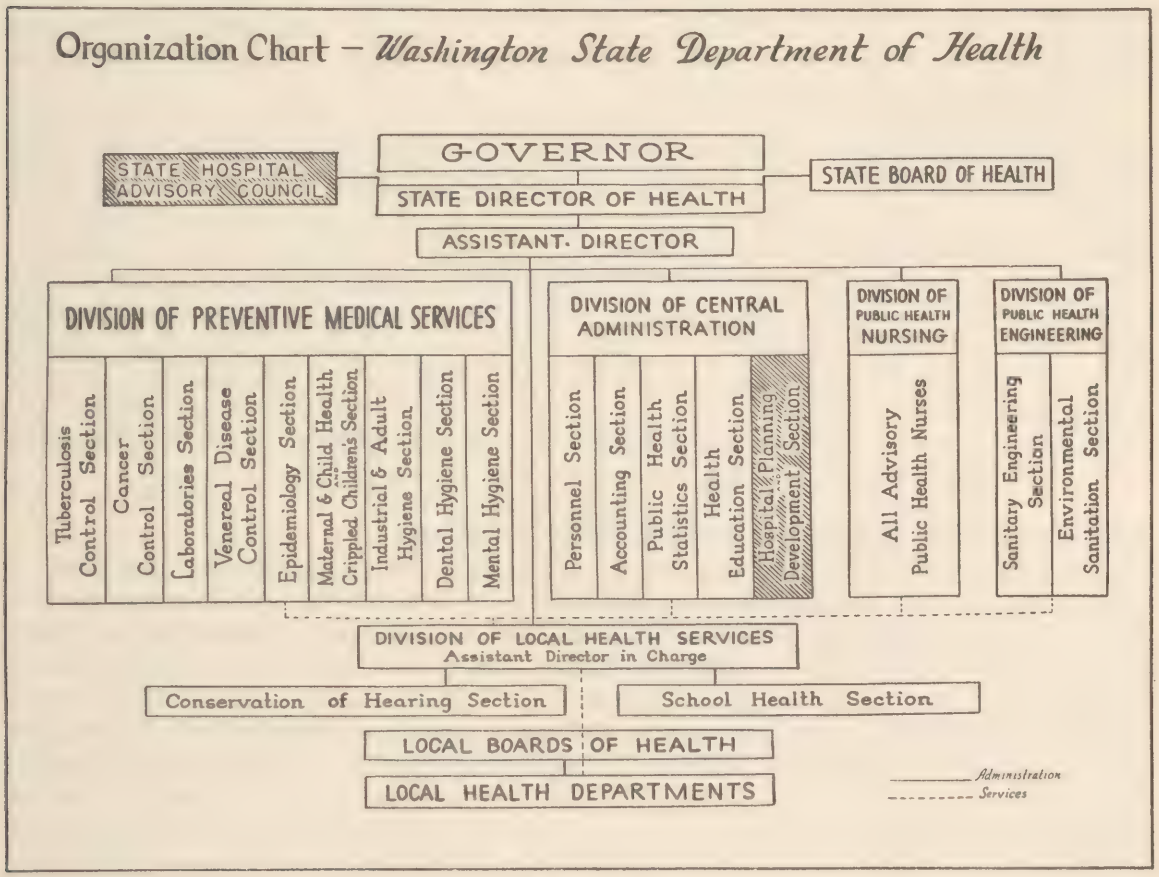

Figure 19

Authority of the State Agency.

Legal authority arises from Chapter 212 of the Session Laws of 1945 which instructed the Washington State Department of Health to make a survey of hospitals and health centers. No reference was made to administration of the Federal Hospital Construction Program, however, until September 27, 1946, when in his letter to Thomas Parran, Surgeon General, the Governor, Mon C. Wallgren, designated the Health Department as the sole agency for supervision and administration of the Hospital Survey and Construction Program in this State. On June 9, 1947, the Attorney General, Smith Troy, in a letter to Dr. Arthur L. Ringle, State Director of Health, ruled that the State Health Department is therefore the properly designated single agency to direct and administer this entire program.

The State Hospital Advisory Council.

At the inception of the Hospital Survey Program in September, 1945, the State Director of Health appointed the Hospital Survey Advisory Council. This same Committee, with a few necessary changes, was designated on July 31, 1947, by the State Director of Health as Advisory Council for the construction phase of the Hospital Survey and Construction Program. The membership of this Council includes among others: Representatives of the various government agencies concerned with hospitals, members of the medical profession, hospital administrators, nurses, architects, and consumers of hospital services from both urban and rural areas. From time to time the membership will change as the intent of the appointments is that organizations and groups be represented. As their officials change the newly elected officers of the various organizations will in most cases be appointed to replace the former Council members. The Committee functions through an inner council or Executive Committee composed of seven members designated to work with the State study group and report back to the entire Council.

The groups represented on the State Hospital Advisory Council are as follows: Washington State Hospital Association, Protestant and Catholic hospitals, Washington State Medical Association, University of Washington School of Medicine, University of Washington School of Nursing, Washington Osteopathic Association, Washington State Dental Association, Washington Society for Mental Hygiene, State Conference of Social Work, Washington State Tuberculosis Association, The National Foundation for Infantile Paralysis, Inc., The American Cancer Society, Inc., Catholic Charities, The American Legion, Washington State College Agricultural Extension Service, Washington State Grange, Washington Farm Bureau, Seattle Junior Chamber of Commerce, International Molders and Foundryworkers Union, Spokane Paper and Stationery Company, Preservative Paint Company, State Department of Public Welfare, State Department of Public Institutions, and Federal Works Agency.

Approval of the Washington State Hospital Plan.

Two copies of the completed Washington State Hospital Plan as approved by the State Advisory Council in general meeting on August 15, 1947, were sent to W. T. Harrison, Medical Director, District No. 5, of the United States Public Health Service in San Francisco. On August 26 Dr. Harrison forwarded the State Plan to the Surgeon General with a recommendation for approval and wrote Dr. Arthur L. Ringle congratulating the Washington staff on its work in preparation of the Plan. The Acting Surgeon General, James A. Crabtree, wrote Dr. Ringle in his letter of September 11, "The Washington State Plan meets requirements of Section 623 of the Hospital Survey and Construction Act and is hereby approved." Thus approved, Federal funds became available to this State. On October 10, 1947, J. R. McGibony, Senior Surgeon, Acting Chief, Division of Hospital Facilities, informed Dr. Ringle by letter that, "Pursuant to Section 624 of the Public Health Service Act, the State of Washington is entitled to an allotment of $512,100 for the fiscal year 1948, for the construction of public and other nonprofit hospitals in accordance with the State Plan."

Revision of the Hospital Construction Program.

Federal regulations require that the Plan be revised periodically as hospitals are built and new information becomes available. In compliance therewith the State Department of Health in consultation with the Advisory Council will from time to time as circumstances require, but at least annually, review the over-all hospital construction program and will submit to the Surgeon General a report which contains such revisions as are considered necessary. The Plan as herein presented was revised as of May 15, 1948.

Publication of the State Plan.

As required by the Federal regulations, the State Plan was given wide publicity both before and after its approval by the Public Health Service. A general description of the proposed State Plan was released for publication in all the daily and weekly newspapers of the State on August 8, 1947, and after a reasonable notice thereof a public hearing was held on August 22, 1947, at which time the State Plan was explained in detail. News releases covering the public hearing are known to have been carried in most of the principal daily and weekly newspapers throughout the State. In addition maps and descriptions were published in the "Health Commentator," monthly organ of the State Health Department, and various other professional organizations and trade associations throughout the State have brought the essential provisions of the State Plan to the attention of their constituents through their journals, magazines and papers.

Talks, seminars and lectures, some of which included graphic illustrations, have been presented to many groups throughout the State including Washington State Public Health Association, Washington Chapter American Institute of Architects, Washington State Hospital Association, Lewis County Health Council, county and district health officers, and the University of Washington health seminars.

In April, 1948, a summary of the State Plan was printed and distributed to all physicians in the State not previously supplied similar information, hospital administrators, State and local health departments, county welfare administrators, volunteer health agencies, architects, farmers' organizations, university libraries and other interested groups and individuals.

One copy of the approved State Plan is available at all times in the office of the State Department of Health for public examination.

Establishment of the Annual Project Construction Schedule.

As was done following original approval of the State Plan by the Public Health Service, the State Department of Health will develop annually a Project Construction Schedule which will list the projects for which construction can be commenced during the fiscal year. The schedule will be developed by soliciting applications from sponsoring agencies in areas of the greatest unfilled need and in the order of the area priorities as shown in the over-all construction program. The number of projects included on the Project Construction Schedule will depend upon the amount of the federal allotment to the State of Washington providing due allowance for revision in the cost of projects.

Projects will be selected for the Project Construction Schedule after consideration of the following factors:

(1) The priority of the project as determined in accordance with the principles outlined for determination of relative need.

(2) The intent of sponsoring agencies to begin construction within a reasonable length of time as shown in the application and supporting evidence.

(3) The ability of the sponsoring agency to meet the financial requirements for construction, maintenance and operation of the proposed facility.

(4) The maintenance of an appropriate balance in the construction of the various categories of facilities (i.e., general, tuberculosis, mental and chronic disease hospitals and public health centers). The balance between categories of facilities will not be reflected in each Project Construction Schedule. However, construction which is scheduled over the five-year program will reflect an appropriate balance between the various categories of facilities.

In determination of this balance of categories due consideration will be given those isolated people in rural areas having no general hospital facilities within a reasonable distance.

If a project is removed from the Project Construction Schedule the schedule will be revised to include the next highest priority project which meets the requirements for inclusion.

The fact that a project is excluded from the Project Construction Schedule for any of several reasons will not change the project priority rating (although for other reasons this priority may change). Such projects will be considered for inclusion in each succeeding Project Construction Schedule.

If a project is in the highest priority group, Part I of the Project Construction Application, which is prescribed by the Public Health Service, may be approved and forwarded prior to approval of the Project Construction Schedule. If the project is not in the highest priority group Part I of the Project Construction Application will be submitted with the Schedule, or as soon as possible thereafter.

The first Project Construction Schedule was submitted to the appropriate Public Health Service District Office following a four-month waiting period after approval of the State Plan. This four-month period was provided to enable higher priority projects to develop construction interest and furnish the essential financial assurances. Hereafter the Schedule will usually be submitted four months after completion of the annual Plan revision. Nothing in this section shall be interpreted to prevent certification of projects in the highest priority groups prior to submission of the entire Construction Schedule.

Applications for federal assistance under Public Law 725 will be submitted to the Federal Government on the Project Construction Application forms which are prescribed by the Public Health Service.

Rules and Regulations Governing Public Hearings.

Every applicant for a construction project within the meaning of the Federal "Hospital Survey and Construction Act" shall be provided with an opportunity for a fair hearing in the event any such applicant feels aggrieved by the action of the State Department of Health. Such a hearing shall be provided in any event if an applicant alleges:

1. That he has been denied an opportunity to make formal application; or
2. His application has been rejected or disapproved and there has been a refusal to reconsider his application.

Hearings also may be granted within the discretion of the Department of Health for any other cause.

The aggrieved applicant (hereinafter referred to as the "appellant"), shall deliver to the Director, State Department of Health, within fifteen (15) days after the action complained of, a written request for a fair hearing. Such a request shall set forth the decision or action complained of.

Upon the receipt of a written request for a hearing on behalf of the appellant, the State Department of Health shall establish a time for a hearing which shall be not less than fifteen (15) days nor more than thirty (30) days from the date the request is received by the Department. Any such hearing shall be held at the time appointed in the offices of the State Department of Health, Seattle, Washington, and the appellant shall be notified in writing in time to provide him with a reasonable opportunity to prepare for the hearing.

The hearing shall be held before the Executive Committee of the State Hospital Advisory Council and shall be conducted by the Director of the State Department of Health. At such hearing the appellant shall be afforded an opportunity to examine relevant documentary evidence and to question opposing witnesses. The appellant shall be entitled to be represented by friends or counsel. Subject to reasonable rules concerning the admissibility of evidence and methods of presentation to be prescribed by the Director, the appellant and other persons interested in the application are entitled to present pertinent evidence.

A stenographic record of the testimony taken at the hearing will be made at the expense of the Department of Health and, upon the request of the appellant, will be transcribed and made available for examination.

The Director of the State Department of Health not later than thirty (30) days from the end of the hearing shall render his decision in writing on the basis of the evidence presented at the hearing, and shall mail or deliver a copy of the decision to the appellant and other parties who have requested copies of such a decision. No appeal will lie to any decision rendered by the Director of the State Department of Health.

Establishment and Maintenance of Personnel Standards on a Merit Basis.

All permanent personnel employed in administering the State Plan will be appointed under and subject to the Merit System maintained by the Washington State Personnel Board. The State Personnel Board furnishes the Public Health Service with such data and information as is necessary to determine compliance with the Act and Regulations.

Fiscal and Accounting Requirements.

The Washington State Department of Health complies with the provisions of Section 53.79 of the Regulations by maintaining the necessary accounting records and controls, and requiring applicants for federal funds to maintain adequate fiscal records and controls.

The State Department of Health will retain on file all documents coming into its possession which relate to any expenditure under Public Law 725. In addition the State Department of Health will take such steps as are necessary to assure that applicants (1) retain all relevant and supporting documents, and (2) establish suitable property inventory records covering all equipment of more than nominal value.

The State Department of Health furthermore will retain the accounting records, controls and documents described above for a period of at least one year beyond its participation in the program, and take such steps as are necessary to assure that applicants retain the fiscal records, controls and documents described above for a period of at least two years after the final payment of federal funds.

Submission of Reports and Accessibility of Records.

The State Department of Health has agreed to make such reports in such form and containing such information as the Surgeon General may from time to time reasonably require, and to give the Surgeon General or his representatives, upon demand, access to the records upon which such information is based.

Minimum Standards for Acceptable Hospitals.

As a guide in preparation of the State Plan the federal regulation in Section 53.1 states that in determining the number of hospitals now in existence which shall serve as a nucleus for the Hospital Construction Program that "It (the term 'hospital') shall exclude * * * institutions found to constitute a public hazard." In the terminology of the State Plan such hospitals shall be classified as unacceptable.

As recommended by the Executive Committee of the State Hospital Advisory Council on July 9, 1947, and adopted by the State Health Department, unacceptable hospitals are defined as those which are unsafe or insanitary by reason of the percentage of land coverage, the light, air, space and accessibility to patients, the size and arrangement of rooms, the sanitary facilities, and the extent to which conditions exist in such buildings which endanger life by fire or other causes.

In applying these standards the Uniform Building Code of the Pacific Coast Building Officials' Conference and Title 42—Public Health, Chapter 1, Public Health Service, Federal Security Agency, shall be used as a guide and source of reference. It is recognized that were only those hospitals which met the standards of the Pacific Coast Uniform Building Code and Title 42, Chapter 1, classified as acceptable institutions, there would be few hospitals left to serve as a nucleus for building a State Hospital Plan. For this reason very liberal interpretations have been utilized as the major criteria in determining which are acceptable hospitals.

Standards of Construction and Equipment.

Construction and equipping of projects assisted under this program shall comply with the general standards of construction and equipment as set forth in Appendix A to Title 42—Public Health, Chapter 1, Part 53, "Grants for Survey Planning and Construction of Hospitals" which contains the rules and regulations of the Surgeon General pursuant to Section 622 of Public Law 725 of the 79th Congress. These standards were adopted by the State Department of Health as recommended by the State Advisory Council on July 9, 1947. Copies of these standards are available for inspection in the offices of the State Department of Health.

Standards of Maintenance and Operation.

The minimum standards for maintenance and operation of all hospitals receiving funds in accordance with the Hospital Survey and Construction Act under provisions of this plan are as follows: "All hospitals with 25 or more beds must meet unconditionally the minimum requirements of the American College of Surgeons as set forth in the Manual of Hospital Standardization, and all institutions with less than 25 beds must meet the requirements of the Council on Medical Education and Hospitals of the American Medical Association as set up in the 'Essentials of a Registered Hospital.' Osteopathic hospitals participating in this program will be required to conform to the standards as recommended by the Bureau of Hospitals of the American Osteopathic Association."

These standards were adopted on July 30, 1947, by the State Department of Health on recommendation of the State Hospital Advisory Council. The authority for the establishment of these standards is based primarily on Chapter 70, Laws of 1943, as amended by Chapter 100, Laws of 1945, together with the ruling of the State Attorney General pertaining thereunto as set forth in his letter of August 8, 1947. Copies of the material herein referred to is on file in the offices of the State Department of Health.

Non-discrimination Statement.

No application will be approved under provisions of this Plan unless the applicant includes therein a statement such as the following: "The applicant hereby assures the State Department of Health that no person in the area will be denied admission as a patient to the facility on account of race, creed or color."

Inspection by the State Department of Health.

When a request for payment of an installment is made the State Department of Health, or authorized agent, will make an inspection of the project to determine

that services have been rendered, work has been performed, and purchases have been made as claimed by the applicant and in accordance with the approved project application. In addition the State Department of Health, or its authorized agent, will make such additional inspections as are deemed necessary. Report of each inspection will be retained in the files of the State Health Department.

Construction Payments.

Requests for construction payments shall be submitted by applicants to the State Department of Health at the times prescribed by Section 53.78 of the regulations. Under existing law, Chapter 243 of the Session Laws of 1945, the State is authorized to make payment of federal funds to all types of applicants eligible under federal regulation.

Federal funds shall be paid to the State Treasurer and the State will promptly remit or credit all payments of federal funds received by the State for payment to applicants for approved construction projects.

Eligibility for Securing Federal Assistance in Hospital Construction.

The Hospital Construction Act establishes a Grants-in-Aid Program to those states which have prepared an acceptable plan and provided for its administration. Federal funds are given to the various applicants by the states in accordance with the Federal law and Regulations. The purpose of Public Law 725 is "to construct public and other non-profit hospitals" in accordance with need as determined by an inventory and survey of existing facilities (Sec. 601).[1] "The term 'Non-profit Hospital' means any hospital owned and operated by a corporation or association, no part of the net earnings of which inures, or may lawfully inure, to the benefit of any private shareholder or individual;" (Sec 631(g)). A "Public Hospital" is one owned and operated by a state, a county, a city, a township, a hospital district, or any other governmental subdivision or any combination of the above. "The term 'construction' includes construction of new buildings, expansion, remodeling, and alteration of existing buildings, and initial equipment of any such buildings;" (Sec. 631 (h)). Specifically excluded are projects for the purchase of existing buildings; hospitals furnishing primarily domiciliary care (Sec. 631 (e)); that portion of a project completed prior to approval of an application; "the cost of offsite improvements and, except with respect to public health centers, the cost of the acquisition of land;" (Sec. 631 (h)).

The legal requirements for administration of the program have been based on recommendations of the Federal Hospital Council and others who represent those concerned with hospital care in the United States. In order to protect federal funds and guarantee their best utilization certain procedures must be followed by those wishing to construct hospitals utilizing funds from the program. These requirements include such items as a detailed description of the proposed project, complete working drawings and specifications, certification as to conformance with minimum standards of maintenance and operation, and assurance of sufficient funds for both the construction and maintenance and operation of the proposed facility.

Compliance with the requirements, while seemingly laborious, will assist the applicant in building a desirable hospital and at the same time result in more high quality care for the money spent.

The administrative procedure established provides that when individual projects are given final approval the amount of money comprising the federal share becomes a contractual obligation of the Federal Government.

A detailed explanation of requirements for eligibility to receive funds will be supplied prospective applicants upon request.

[1] All references are to Sections of the Hospital Survey and Construction Act (Public Law 725).

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APPENDIX B

STATISTICAL SUPPLEMENT

Table 1.—POPULATION GROWTH, SERVICE AREAS FOR GENERAL HOSPITALS, STATE OF WASHINGTON, 1930-1947

Hospital Service Areas	*1930*①	*1940*①	*1945*②	*1946*③	*1947*④
B-1 Seattle	430,978	469,515	558,637	619,803	643,982
B-2 Tacoma	195,500	216,557	228,236	253,226	262,598
B-3 Spokane	157,850	172,141	189,289	210,014	216,961
I-1 Everett	80,210	90,298	92,164	102,255	102,481
I-2 Bremerton	31,633	45,376	87,165	96,709	85,729
I-3 Aberdeen-Hoquiam	58,326	51,698	46,481	51,570	54,479
I-4 Centralia-Chehalis	41,614	43,272	41,966	46,561	46,258
I-5 Olympia	31,427	36,874	37,059	41,117	40,816
I-6 Colfax	21,653	26,871	27,341	30,335	30,151
I-7 Yakima	65,707	84,058	89,958	99,808	102,387
I-8 Vancouver	46,574	58,374	88,882	98,614	82,197
I-9 Longview-Kelso	35,774	44,451	49,564	54,991	57,632
I-10 Bellingham	59,128	60,355	58,132	64,497	65,250
I-11 Mount Vernon	43,140	46,350	48,991	54,355	58,950
I-12 Walla Walla	32,437	34,703	34,720	38,522	37,352
I-13 Pasco-Kennewick	12,972	13,910	38,060	42,227	39,862
I-14 Wenatchee	37,520	41,235	41,152	45,658	46,936
R-1 Port Angeles	16,423	17,546	17,076	18,946	19,050
R-2 Port Townsend	7,920	8,462	8,320	9,231	9,189
R-3 Forks	4,452	4,758	4,145	4,599	5,018
R-4 Raymond-South Bend	14,970	15,928	14,294	15,859	16,313
R-5 Shelton	9,203	10,614	11,850	13,147	12,253
R-6 Coulee Dam	10,798	17,814	16,240	18,018	12,725
R-7 Colville	15,956	16,668	14,852	16,478	17,156
R-8 Tonasket-Republic	7,629	9,632	9,652	10,709	11,270
R-9 Davenport	9,219	8,915	8,162	9,056	9,001
R-10 Ritzville-Sprague	8,265	6,883	6,314	7,005	7,052
R-11 Ione	2,763	2,764	2,577	2,859	2,967
R-12 Sunnyside-Prosser	14,889	18,476	21,673	24,046	24,022
R-13 Ellensburg	18,154	20,230	20,490	22,733	24,469
R-14 Goldendale	6,452	7,458	6,884	7,638	7,775
R-15 Pomeroy	12,808	12,800	11,778	13,067	14,797
R-16 Connell	2,205	2,051	2,746	3,046	2,993
R-17 Brewster-Okanogan	11,073	14,561	15,177	16,839	16,663
R-18 Ephrata	1,774	4,593	3,698	4,102	8,266
ALL AREAS	1,563,396	1,736,191	1,953,725	2,167,640	2,195,000

① Civilian population as of April 1 from Table 3, page 2, "Population First Series, Number of Inhabitants," 16th Census of the United States.

② Based on the civilian population for July 1, 1946, as estimated cooperatively by the Washington State Census Board, Washington State Department of Health, and Washington State Department of Social Security, released April 10, 1947, by the Public Health Statistics Section of the Health Department; and the estimate for July 1, 1945, from "Population, Special Reports," Series P-46, No. 3, U. S. Bureau of the Census.

③ Based on civilian population as of July 1, 1946, as reported in Table 4, page 6 of "Current Population Reports, Population Estimates," Series P-25, No. 2, U. S. Bureau of the Census.

④ Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by the Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, U. S. Bureau of the Census, Department of Commerce.

Table 2.—ESTIMATED POPULATION OF SERVICE AREAS FOR GENERAL HOSPITALS, DISTRIBUTED BY POPULATION OF COUNTIES OR PARTS OF COUNTIES FORMING THE AREAS

Hospital Service Areas	Counties Included	Population—1940[1] Counties	Population—1940[1] Area	Population—1947[2] Counties	Population—1947[2] Area	Population—1947[3] Counties	Population—1947[3] Area
B-1 Seattle	King	469,515	469,515	611,897	611,897	643,982	643,982
B-2 Tacoma	King	34,476		44,816		47,165	
	Pierce	182,081	216,557	204,700	249,516	215,433	262,598
B-3 Spokane	Pend Oreille	4,392		4,681		4,926	
	Stevens	3,097		2,771		2,916	
	Spokane	164,652	172,141	198,700	206,152	209,119	216,961
I-1 Everett	Snohomish	85,894		92,247		97,084	
	King	989		1,287		1,355	
	Island	3,415	90,298	3,841	97,375	4,042	102,481
I-2 Bremerton	Mason	989		1,058		1,113	
	Kitsap	44,387	45,376	80,400	81,458	84,616	85,729
I-3 Aberdeen	Grays Harbor	51,698	51,698	51,765	51,765	54,479	54,479
I-4 Centralia	Thurston	1,879		1,753		1,845	
	Lewis	41,393	43,272	42,200	43,953	44,413	46,258
I-5 Olympia	Thurston	35,406		37,247		39,200	
	Grays Harbor	1,468	36,874	1,535	38,782	1,616	40,816
I-6 Colfax	Whitman	26,871	26,871	28,649	28,649	30,151	30,151
I-7 Yakima	Yakima	84,058	84,058	97,286	97,286	102,387	102,387
I-8 Vancouver	Clark	49,852		70,000		73,670	
	Skamania	4,623		4,490		4,725	
	Klickitat	3,899	58,374	3,612	78,102	3,802	82,197
I-9 Longview	Wahkiakum	4,286		4,000		4,210	
	Cowlitz	40,155		50,750		53,411	
	Skamania	10	44,451	10	54,760	11	57,632
I-10 Bellingham	Whatcom	60,355	60,355	62,000	62,000	65,250	65,250
1-11 Mt. Vernon	Skagit	37,650		44,200		46,518	
	Whatcom	0		0		0	
	San Juan	3,157		5,300		5,578	
	Island	2,683		3,659		3,851	
	Snohomish	2,860	46,350	2,853	56,012	3,003	58,950
1-12 Walla Walla	Walla Walla	30,206		30,950		32,573	
	Columbia	4,497	34,703	4,541	35,491	4,779	37,352
I-13 Pasco	Benton	8,538		29,858		31,424	
	Franklin	5,031		7,868		8,280	
	Walla Walla	341	13,910	150	37,876	158	39,862
I-14 Wenatchee	Chelan	34,412		38,000		39,993	
	Grant	157		23		24	
	Douglas	6,666	41,235	6,574	44,597	6,919	46,936
R-1 Pt. Angeles	Clallam	17,546	17,546	18,101	18,101	19,050	19,050
R-2 Pt. Townsend	Jefferson	8,462	8,462	8,731	8,731	9,189	9,189

[1], [2], [3]—See footnotes at end of table.

Table 2.—ESTIMATED POPULATION OF SERVICE AREAS FOR GENERAL HOSPITALS, DISTRIBUTED BY POPULATION OF COUNTIES OR PARTS OF COUNTIES FORMING THE AREAS —Continued

Hospital Service Areas	Counties Included	Population—1940[1] Counties	Population—1940[1] Area	Population—1947[2] Counties	Population—1947[2] Area	Population—1947[3] Counties	Population—1947[3] Area
R-3 Forks	Clallam	4,302		4,499		4,735	
	Jefferson	456	4,758	269	4,768	283	5,018
R-4 South Bend	Pacific	15,928	15,928	15,500	15,500	16,313	16,313
R-5 Shelton	Mason	10,614	10,614	11,642	11,642	12,253	12,253
R-6 Coulee Dam	Ferry	717		655		689	
	Lincoln	2,562		2,474		2,604	
	Grant	9,918		4,223		4,444	
	Douglas	1,260		1,223		1,287	
	Okanogan	3,357	17,814	3,516	12,091	3,701	12,725
R-7 Colville	Ferry	1,705		1,560		1,642	
	Stevens	14,963	16,668	14,741	16,301	15,514	17,156
R-8 Tonasket	Okanogan	7,353		8,624		9,076	
	Ferry	2,279	9,632	2,085	10,709	2,194	11,270
R-9 Davenport	Stevens	1,215		1,088		1,145	
	Lincoln	7,700	8,915	7,465	8,553	7,856	9,001
R-10 Ritzville	Lincoln	1,099		1,061		1,117	
	Adams	5,434		5,288		5,566	
	Whitman	350	6,883	351	6,700	369	7,052
R-11 Ione	Pend Oreille	2,764	2,764	2,819	2,819	2,967	2,967
R-12 Sunnyside	Yakima	14,961		17,784		18,716	
	Benton	3,515	18,476	5,042	22,826	5,306	24,022
R-13 Ellensburg	Kittitas	20,230	20,230	23,250	23,250	24,469	24,469
R-14 Goldendale	Klickitat	7,458	7,458	7,388	7,388	7,775	7,775
R-15 Pomeroy	Asotin	8,365		10,200		10,735	
	Columbia	1,052		959		1,010	
	Garfield	3,383	12,800	2,900	14,059	3,052	14,797
R-16 Connell	Franklin	1,276		2,132		2,244	
	Adams	775	2,051	712	2,844	749	2,993
R-17 Brewster	Okanogan	13,836		15,130		15,923	
	Douglas	725	14,561	703	15,833	740	16,663
R-18 Ephrata	Grant	4,593	4,593	7,854	7,854	8,266	8,266
TOTAL ALL AREAS		1,736,191	1,736,191	2,085,640	2,085,640	2,195,000	2,195,000

[1] Civilian population as of April 1, 1940, from Table 4, pages 3-13, Population First Series, 16th Census of the United States.

[2] Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by the Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

[3] Population distribution for 1947 adjusted to agree with the United States Bureau of the Census estimate of civilian population of the State of Washington as given in "Current Population Reports," Series P-25, No. 4, as of July 1, 1947.

Table 3.—INCORPORATED CITIES AND TOWNS WITH A POPULATION OF 1,000 OR MORE, STATE OF WASHINGTON, 1947①

City	*Population*	*City*	*Population*	*City*	*Population*
Aberdeen	20,500	Goldendale	1,943	Prosser	2,405
Anacortes	7,000	Grand Coulee	2,300	Pullman	5,775
Arlington	1,805	Grandview	2,010	Puyallup	10,000
Auburn	6,137	Granger	1,010	Raymond	4,350
Bellingham	32,500	Hoquiam	11,800	Renton	15,309
Blaine	1,730	Kalama	1,050	Ritzville	1,900
Bremerton	35,000	Kelso	8,250	Rosslyn	1,740
Buckley	2,254	Kennewick	5,500	Seattle	470,000
Burlington	2,257	Kent	3,217	Sedro Woolley	3,300
Camas	5,200	Kirkland	3,239	Selah	2,440
Cashmere	1,600	Leavenworth	1,695	Shelton	4,249
Castle Rock	1,275	Longview	17,500	Snohomish	3,116
Centralia	8,066	Lynden	2,150	Soap Lake	2,239
Chehalis	5,051	Marysville	2,090	South Bend	2,026
Chelan	2,100	McCleary	1,200	Spokane	147,000
Cheney	2,286	Millwood	1,042	Steilacoom	1,225
Chewelah	1,850	Milton	1,320	Sumner	2,624
Clarkston	4,000	Monroe	1,646	Sunnyside	4,221
Cle Elum	2,313	Montesano	2,315	Tacoma	136,000
Colfax	3,000	Morton	1,100	Tekoa	1,450
College Place	2,500	Moses Lake	1,950	Tenino	1,182
Colville	3,065	Mount Vernon	4,921	Tonasket	1,238
Cosmopolis	1,175	Newport	1,400	Toppenish	4,852
Coulee City	1,100	Oak Harbor	1,064	Tumwater	1,186
Davenport	1,322	Okanogan	2,150	Union Gap	1,604
Dayton	3,200	Olympia	16,000	Vancouver	26,000
Deer Park	1,316	Omak	3,363	Waitsburg	1,025
Eatonville	1,100	Oroville	1,623	Walla Walla	22,500
Edmonds	1,920	Orting	1,260	Wapato	3,105
Ellensburg	7,152	Palouse	1,167	Washougal	1,378
Elma	1,520	Pasco	6,000	Waterville	1,018
Enumclaw	2,800	Pomeroy	1,715	Wenatchee	13,000
Ephrata	3,269	Port Angeles	10,800	White Salmon	1,200
Everett	35,000	Port Orchard	2,700	Winlock	1,125
Fircrest	1,195	Port Townsend	6,500	Woodland	1,170
Forks	1,105	Poulsbo	1,275	Yakima	35,000

① From the Washington State Census Board estimates for April 1, 1947, released October 24, 1947. Excludes Richland located in Benton County.

Table 4.—LAND AREA AND POPULATION DENSITY OF SERVICE AREAS FOR GENERAL HOSPITALS, STATE OF WASHINGTON, 1947

Hospital Service Areas	*Population of Service Areas*[1]	*Land Area Square Miles*[2]	*Population Per Square Mile*
B-1 Seattle	643,982	1,360	473.5
B-2 Tacoma	262,598	2,272	115.6
B-3 Spokane	216,961	2,712	80.0
I-1 Everett	102,481	2,360	43.4
I-2 Bremerton	85,729	515	166.5
I-3 Aberdeen-Hoquiam	54,479	1,811	30.1
I-4 Centralia-Chehalis	46,258	2,502	18.5
I-5 Olympia	40,816	758	53.8
I-6 Colfax	30,151	2,079	14.5
I-7 Yakima	102,387	3,640	28.1
I-8 Vancouver	82,197	2,415	34.0
I-9 Longview-Kelso	57,632	1,578	36.5
I-10 Bellingham	65,250	2,007	32.5
I-11 Mount Vernon	58,950	2,180	27.0
I-12 Walla Walla	37,352	1,705	21.9
I-13 Pasco-Kennewick	39,862	1,774	22.5
I-14 Wenatchee	46,936	3,853	12.2
R-1 Port Angeles	19,050	974	19.6
R-2 Port Townsend	9,189	1,348	6.8
R-3 Forks	5,018	1,243	4.0
R-4 Raymond-South Bend	16,313	925	17.6
R-5 Shelton	12,253	854	14.3
R-6 Coulee Dam	12,725	2,928	4.3
R-7 Colville	17,156	2,580	6.6
R-8 Tonasket-Republic	11,270	2,505	4.5
R-9 Davenport	9,001	1,873	4.8
R-10 Ritzville-Sprague	7,052	1,698	4.2
R-11 Ione	2,967	920	3.2
R-12 Sunnyside-Prosser	24,022	1,215	19.8
R-13 Ellensburg	24,469	2,315	10.6
R-14 Goldendale	7,775	1,644	4.7
R-15 Pomeroy	14,797	1,677	8.8
R-16 Connell	2,993	1,256	2.4
R-17 Brewster-Okanogan	16,663	3,064	5.4
R-18 Ephrata	8,266	2,439	3.4
ALL AREAS	2,195,000	66,979	32.8

[1] Based on "Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports, as of July 1, 1947," Series P-25, No. 4, Bureau of the Census, Department of Commerce.

[2] Land Area values are taken from Table III, "Areas of the United States, 1940," 16th Census of the United States, Bureau of the Census.

Table 5.—UTILIZATION OF GENERAL HOSPITAL FACILITIES BY SERVICE AREAS, STATE OF WASHINGTON, CALENDAR YEAR 1947[1][2]

Hospital Service Areas	*Number of Hospitals*	*Bed Complement*	*Patient Days*	*Average Census*
B-1 Seattle	22	2,629	751,852	2,060
B-2 Tacoma	9	912	251,988	690
B-3 Spokane	7	957	290,550	796
I-1 Everett	5	303	75,631	207
I-2 Bremerton	2	251	58,765	161
I-3 Aberdeen-Hoquiam	3	237	72,749	199
I-4 Centralia-Chehalis	3	101	26,517	73
I-5 Olympia	1	134	34,310	94
I-6 Colfax	2	155	34,625	95
I-7 Yakima	3	376	106,770	292
I-8 Vancouver	5	674	164,250	450
I-9 Longview-Kelso	2	153	44,895	123
I-10 Bellingham	3	281	73,311	201
I-11 Mount Vernon	5	194	46,355	127
I-12 Walla Walla	3	202	56,575	155
I-13 Pasco-Kennewick	2	174	37,230	102
I-14 Wenatchee	3	161	49,275	135
R-1 Port Angeles	2	150	31,755	87
R-2 Port Townsend	1	90	11,315	31
R-3 Forks	0	0	0	0
R-4 Raymond-South Bend	2	55	12,101	33
R-5 Shelton	2	70	18,100	50
R-6 Coulee Dam	1	46	5,840	16
R-7 Colville	3	100	28,439	78
R-8 Tonasket-Republic	2	57	13,180	36
R-9 Davenport	0	0	0	0
R-10 Ritzville-Sprague	1	18	3,500	10
R-11 Ione	1	10	2,557	7
R-12 Sunnyside-Prosser	2	38	12,109	33
R-13 Ellensburg	4	116	27,686	76
R-14 Goldendale	1	28	5,692	16
R-15 Pomeroy	1	12	2,000	5
R-16 Connell	0	0	0	0
R-17 Brewster-Okanogan	1	31	7,337	20
R-18 Ephrata	1	25	5,475	15
ALL AREAS	105	8,740	2,362,734	6,473

[1] Excludes the following hospitals still under construction or opened since January 1, 1948: Area I-14, Lake Chelan Hospital; R-15, Pomeroy Community Hospital; I-6, Finch Memorial Hospital; R-17, Brewster Community Hospital; I-14, Douglas County Memorial Hospital; I-7, Yakima Valley Memorial Hospital; B-2, Enumclaw Community Memorial Hospital; and B-3, an addition to Sacred Heart Hospital in Spokane.

[2] From records on file in the office of the Hospital Planning and Development Section of the State Department of Health.

Table 6.—GENERAL HOSPITAL BEDS NEEDED BY SERVICE AREAS AS ESTIMATED FROM AVERAGE USAGE, STATE OF WASHINGTON, 1947

Hospital Service Areas		*Population 1947*[1]	*Estimated Patient Days*[2]	*Occupied Beds Estimated*
B-1	Seattle	643,982	693,193	1,899
B-2	Tacoma	262,598	282,664	774
B-3	Spokane	216,961	233,540	640
I-1	Everett	102,481	110,312	302
I-2	Bremerton	85,729	92,280	253
I-3	Aberdeen-Hoquiam	54,479	58,642	161
I-4	Centralia-Chehalis	46,258	49,793	136
I-5	Olympia	40,816	43,935	120
I-6	Colfax	30,151	32,455	89
I-7	Yakima	102,387	110,211	302
I-8	Vancouver	82,197	88,478	242
I-9	Longview-Kelso	57,632	62,036	170
I-10	Bellingham	65,250	70,236	192
I-11	Mount Vernon	58,950	63,455	174
I-12	Walla Walla	37,352	40,206	110
I-13	Pasco-Kennewick	39,862	42,908	117
I-14	Wenatchee	46,936	50,523	138
R-1	Port Angeles	19,050	20,506	56
R-2	Port Townsend	9,189	9,891	27
R-3	Forks	5,018	5,401	15
R-4	Raymond-South Bend	16,313	17,560	48
R-5	Shelton	12,253	13,189	37
R-6	Coulee Dam	12,725	13,697	38
R-7	Colville	17,156	18,467	50
R-8	Tonasket-Republic	11,270	12,131	33
R-9	Davenport	9,001	9,689	27
R-10	Ritzville-Sprague	7,052	7,591	20
R-11	Ione	2,967	3,194	9
R-12	Sunnyside-Prosser	24,022	25,858	71
R-13	Ellensburg	24,469	26,339	72
R-14	Goldendale	7,775	8,369	23
R-15	Pomeroy	14,797	15,928	44
R-16	Connell	2,993	3,222	10
R-17	Brewster-Okanogan	16,663	17,936	49
R-18	Ephrata	8,266	8,899	25
ALL AREAS		2,195,000	2,362,734	6,473

[1] Based on Estimated Population of the State of Washington, by Counties and Cities, as of July 1, 1947," prepared by the Washington State Department of Health, Section of Public Health Statistics; and on "Current Population Reports," as of July 1, 1947, Series P-25, No. 4, Bureau of the Census, Department of Commerce.

[2] Calculated from the State average of 1.076 days in the hospital per year for each person as shown by records on file in the office of the Hospital Planning and Development Section of the State Department of Health.

Table 7.—DEATHS ALLOCATED TO PLACE OF RESIDENCE BY SERVICE AREAS FOR GENERAL HOSPITALS, STATE OF WASHINGTON, 1945-1947[1][2]

Hospital Service Areas	*Deaths In 1945*	*Deaths In 1946*	*Deaths In 1947*	*Average 1945-1947*
B-1 Seattle	6,310	6,367	6,272	6,316
B-2 Tacoma	2,713	2,565	2,660	2,646
B-3 Spokane	2,087	2,178	2,220	2,162
I-1 Everett	1,014	1,092	1,159	1,088
I-2 Bremerton	712	681	605	666
I-3 Aberdeen-Hoquiam	565	596	591	584
I-4 Centralia-Chehalis	502	469	446	472
I-5 Olympia	376	407	384	389
I-6 Colfax	218	233	250	233
I-7 Yakima	951	921	924	932
I-8 Vancouver	747	739	766	750
I-9 Longview-Kelso	358	380	440	393
I-10 Bellingham	683	723	723	710
I-11 Mount Vernon	520	580	533	544
I-12 Walla Walla	405	423	378	402
I-13 Pasco-Kennewick	184	213	190	196
I-14 Wenatchee	392	387	383	387
R-1 Port Angeles	167	187	202	185
R-2 Port Townsend	83	92	91	89
R-3 Forks	41	46	45	44
R-4 Raymond-South Bend	173	151	156	160
R-5 Shelton	99	113	108	107
R-6 Coulee Dam	111	126	109	115
R-7 Colville	150	148	166	155
R-8 Tonasket-Republic	68	79	75	74
R-9 Davenport	85	79	105	90
R-10 Ritzville-Sprague	63	49	62	58
R-11 Ione	21	18	24	21
R-12 Sunnyside-Prosser	195	197	169	187
R-13 Ellensburg	176	203	172	184
R-14 Goldendale	70	52	63	62
R-15 Pomeroy	136	127	139	134
R-16 Connell	24	19	24	22
R-17 Brewster-Okanogan	106	127	111	115
R-18 Ephrata	20	26	77	41
ALL AREAS	20,525	20,793	20,822	20,713

[1] Excludes deaths at mental institutions as follows:

	1945	*1946*	*1947*
B-2 Western State Hospital	329	344	332
Rainier State School	8	11	11
American Lake			47
B-3 Eastern State Hospital	185	220	218
Lakeland Village	21	12	16
I-11 Northern State Hospital	224	240	248

[2] Data from "Annual Report, Public Health Statistics," for 1945 and Vol. II, No. 3, 1946; and the "Summary of Vital Statistics," Vol. III, No. 8, December, 1947, State Department of Health, Public Health Statistics Section.

Table 8.—PER CENT OF DEATHS OCCURRING IN HOSPITALS AND RELATION OF DEATHS IN GENERAL HOSPITALS TO TOTAL PATIENT DAYS OF CARE PROVIDED, STATE OF WASHINGTON, 1947

Hospital Service Area	Total Deaths[1]	In Hospitals	Per Cent of Deaths In Hospitals	Patient Days[2]	Deaths[2]	Patient Days Per Death
B-1 Seattle	6,556	3,358	51.2	469,693	1,738	270.2
B-2 Tacoma	2,659	1,229	46.2	145,770	519	280.9
B-3 Spokane	2,447	1,206	49.3	272,075	968	281.1
I-1 Everett	1,101	514	46.7	63,648	348	182.9
I-2 Bremerton	551	234	42.5	68,342	243	281.2
I-3 Aberdeen-Hoquiam	591	288	48.7	48,396	315	153.6
I-4 Centralia Chehalis	463	163	35.2	11,971	60	199.5
I-5 Olympia	344	161	46.8	28,369	131	216.6
I-6 Colfax	224	101	45.1	15,284	48	318.4
I-7 Yakima	956	463	48.4	62,873	355	177.1
I-8 Vancouver	798	388	48.6	143,425	396	362.2
I-9 Longview-Kelso	415	215	51.8	36,584	145	252.3
I-10 Bellingham	707	357	50.5	62,578	227	275.7
I-11 Mount Vernon	498	193	38.8	46,377	191	242.8
I-12 Walla Walla	482	240	49.8	55,152	216	255.3
I-13 Pasco-Kennewick	180	93	51.7	13,870	53	261.7
I-14 Wenatchee	391	180	46.0	36,723	171	214.8
R-1 Port Angeles	221	121	54.8	33,571	88	381.5
R-2 Port Townsend	94	51	54.3	13,667	33	414.2
R-3 Forks	31	0	0.0	.....	.....	.....
R-4 Raymond-South Bend	142	64	45.1	2,101	16	131.3[3]
R-5 Shelton	106	55	51.9	14,009	72	194.6
R-6 Coulee Dam	128	69	53.9	6,856	34	201.6
R-7 Colville	178	110	61.8	18,180	70	259.7
R-8 Tonasket-Republic	85	43	50.6	8,698	24	362.4
R-9 Davenport	58	0	0.0	.....	.....	.....
R-10 Ritzville-Sprague	55	20	36.4[3]	.....	.....	.....[3]
R-11 Ione	27	13	48.1[3]	2,557	13	196.7[3]
R-12 Sunnyside-Prosser	121	50	41.3	.....	.....	.....[3]
R-13 Ellensburg	189	115	60.8	17,194	54	318.4
R-14 Goldendale	56	21	37.5[3]	.....	.....	.....[3]
R-15 Pomeroy	102	13	12.7[3]	.....	.....	.....[3]
R-16 Connell	11	0	0.0	.....	.....	.....
R-17 Brewster-Okanogan	98	37	37.8	6,926	10	692.6[3]
R-18 Ephrata	50	13	26.0[3]	.....	.....	.....[3]
ALL AREAS	21,115	10,178	48.2	1,704,889	6,538	260.8

[1] Deaths by occurrence compiled from unpublished data supplied by Public Health Statistics Section, State Department of Health.

[2] From the survey made of 64 non-governmental general hospitals by the State Department of Health using the "Hospital Schedules of Information."

[3] Data unavailable or sample obviously of inadequate size for accurate computation.

Table 9.—BEDS NEEDED IN GENERAL HOSPITALS AS ESTIMATED FROM BED-DEATH RATIO BY AREAS—STATE OF WASHINGTON, 1947

Hospital Service Areas	*Deaths by Residence, Average 1945-1947*[1]	*Estimated Number In Hospitals*[2]	*Occupied Beds Estimated*[3]
B-1 Seattle	6,316.7	3,158.4	2,255
B-2 Tacoma	2,645.8	1,322.9	945
B-3 Spokane	2,161.7	1,080.9	772
I-1 Everett	1,088.5	544.2	389
I-2 Bremerton	665.7	332.8	238
I-3 Aberdeen-Hoquiam	583.9	292.0	208
I-4 Centralia-Chehalis	472.2	236.1	169
I-5 Olympia	388.9	194.4	139
I-6 Colfax	233.6	116.8	83
I-7 Yakima	932.1	466.0	333
I-8 Vancouver	750.1	375.0	268
I-9 Longview-Kelso	392.7	196.4	140
I-10 Bellingham	709.7	354.8	253
I-11 Mount Vernon	544.3	272.2	194
I-12 Walla Walla	402.2	201.1	144
I-13 Pasco-Kennewick	195.7	97.9	70
I-14 Wenatchee	387.2	193.6	138
R-1 Port Angeles	185.3	92.6	66
R-2 Port Townsend	88.9	44.4	32
R-3 Forks	43.7	21.9	16
R-4 Raymond-South Bend	160.0	80.0	57
R-5 Shelton	107.0	53.5	38
R-6 Coulee Dam	115.2	57.6	41
R-7 Colville	154.8	77.4	55
R-8 Tonasket-Republic	74.0	37.0	26
R-9 Davenport	89.8	44.9	32
R-10 Ritzville-Sprague	58.0	29.0	21
R-11 Ione	20.9	10.5	7
R-12 Sunnyside-Prosser	187.2	93.6	67
R-13 Ellensburg	183.7	91.8	65
R-14 Goldendale	61.5	30.8	22
R-15 Pomeroy	133.9	67.0	48
R-16 Connell	22.4	11.2	8
R-17 Brewster-Okanogan	114.9	57.4	41
R-18 Ephrata	41.3	20.7	15
ALL AREAS	20,713.5	10,356.8	7,395

[1] Data from "Annual Report, Public Health Statistics," for 1945 and Vol. II, No. 3, 1946; and the "Summary of Vital Statistics," Vol. III, No. 8, December, 1947, State Department of Health, Public Health Statistics Section.

[2] Calculated on the basis of 50% occupancy in hospitals as the State average is 48.2% as shown in Appendix Table 8.

[3] Determined from the ratio of the deaths occurring in hospitals to the total number of days care provided by the hospitals. The Washington State average is 260.7 patient days per death or .714 occupied beds per death.

Appendix C. Directory of Hospitals

Part I. GENERAL, MENTAL, AND TUBERCULOSIS HOSPITALS

County and Institution[1]	*Street Address*[2]	*City*[2]	*Type of Service*[3]
ADAMS			
Ritzville General Hospital		Ritzville	Gen
ASOTIN			
Clarkston Clinic and Hospital	721 6th St.	Clarkston	Gen
BENTON			
Kadlec Hospital		Richland	Gen
Prosser Memorial Hospital	Memorial St.	Prosser	Gen
CHELAN			
Cascade Sanitarium (Leavenworth San.)	840 Main St.	Leavenworth	Gen
Central Wash. Deaconess Hospital (Deaconess Hospital)	312 Okanogan St.	Wenatchee	Gen
Lake Chelan Hospital		Chelan	Gen
St. Anthony Hospital	Cleveland & Washington	Wenatchee	Gen
CLALLAM			
Davidson-Hay Hospital	306 W. 1st St.	Pt. Angeles	Gen
Port Angeles General Hospital	3rd & Francis St.	Pt. Angeles	Gen
CLARK			
Clark County Hospital	Co. Welfare Dept., Court House (2514 T. St.)	Vancouver	Gen
Northern Permanente Found. Hosp.	East of City Limits	Vancouver	Gen
St. Joseph's Hospital	500 E. 12th St.	Vancouver	Gen
Vancouver Mem. Hosp. (Clark Gen. Hosp.)	3400 Main St.	Vancouver	Gen
COLUMBIA			
Brining Memorial Hospital	221 E. Washington Ave.	Dayton	Gen
COWLITZ			
Cowlitz General Hospital	Broadway at 7th	Longview	Gen
St. John's Hosp. (Memorial Hosp.)	15th & Douglas	Longview	Gen
FERRY			
Ferry County Hospital Ass'n (Republic Hospital)		Republic	Gen
FRANKLIN			
Our Lady of Lourdes Hospital	4th & Park Sts.	Pasco	Gen
GARFIELD			
Garfield County Public Hospital (Pomeroy Community Hospital)		Pomeroy	Gen
GRANT			
Columbia Basin Hospital		Ephrata	Gen
GRAYS HARBOR			
Elma General Hosp. (Conway Hosp.)	217 N. 4th	Elma	Gen
Grays Harbor Community Hospital (Aberdeen Gen.) (Community Hosp.)	2110 Simpson Ave.	Aberdeen	Gen
Oakhurst Sanatorium		Elma	TB
St. Joseph's Hospital	5th & G. Sts.	Aberdeen	Gen

County and Institution ①	*Street Address* ②	*City* ②	*Type of Service* ③
JEFFERSON			
St. John's Hospital	Sheridan & Cleveland	Pt. Townsend	Gen
KING (Exclusive of Seattle)			
Auburn General Hospital	20 2nd St. N.E.	Auburn	Gen
Fairfax Sanitarium	Kirkland, Route No. 2	Juanita	Ment
Firlawns Sanitarium	Box No. 97	Kenmore	Ment
Kirkland General Hospital	220 Kirkland Ave.	Kirkland	Gen
Nelems Memorial Hospital	Sunset Highway	North Bend	Gen
Renton Hospital	200 Shattuck St.	Renton	Gen
KING (Seattle only)			
Ballard General Hospital, Inc.	2208 Market St.	Seattle	Gen
Children's Orthopedic Hospital	100 Crockett St.	Seattle	Child
Cobb Hospital	4th & University	Seattle	Surg
Columbus Hospital	1019 Madison St.	Seattle	Gen
Crown Hill Hospital	9009 12th N. W.	Seattle	Ment
Doctors' Hospital	909 University	Seattle	Gen
Firland Sanatorium (King Co. TB)	15th Ave. N.E. & E. 150th	Seattle	TB
Florence Crittenton Home of Seattle	9236 Renton Ave.	Seattle	Mat
Halcyon Sanitarium	9239 1st Ave. N.E.	Seattle	Ment
King County Hosp. No. 1 (Harborview Hosp.)	9th & Jefferson	Seattle	Gen
Laurel Beach Sanatorium	10203 47th S.W.	Seattle	TB
Madison Street Hospital	1620 18th Ave.	Seattle	Gen
Maynard Hospital	1309 Summit Ave.	Seattle	Gen
Medical & Dental Bldg. Surgery	509 Olive Way	Seattle	Surg
Providence Hospital	17th & E. Jefferson	Seattle	Gen
Riverton Hospital	12844 Military Road	Seattle	TB
St. Luke's Hospital	201 16th Ave. N.	Seattle	Gen
Seattle General Hospital	809 5th Ave.	Seattle	Gen
Swedish Hospital	803 Summit Ave.	Seattle	Gen
Thompson Hospital	229 Broadway N.	Seattle	Mat
Virginia Mason Hospital	1101 Terry Ave.	Seattle	Gen
Waldo General Hospital	15th N.E. & E. 85th	Seattle	Gen
Washington Memorial Hospital	1615 17th Ave.	Seattle	Gen
West Seattle General Hospital	4704 California Ave.	Seattle	Gen
KITSAP			
Harrison Memorial Hospital	7th & Chester	Bremerton	Gen
Kitsap County Tuberculosis Hospital		Pt. Orchard	TB
Puget Sound Naval Memorial Hospital (F. D. Roosevelt Hospital)	6th & Marion	Bremerton	Gen
KITTITAS			
Ellensburg General Hospital	814 E. 3rd St.	Ellensburg	Gen
Kittitas County Hospital	Co. Welfare Dept., P. O. Box 328 (509 Nanum)	Ellensburg	Gen
Roslyn-Cle Elum Beneficial Co. Hosp.		Cle Elum	Gen
Valley General Hospital	4th & Ruby	Ellensburg	Gen
KLICKITAT			
Goldendale General Hospital	415 S. Grant	Goldendale	Gen
West Klickitat Hospital		White Salmon	Gen

County and Institution ①	*Street Address*②	*City*③	*Type of Service*④
LEWIS			
Lewis Co. General Hospital (Centralia Gen. Hosp.)	Co. Welfare Dept., Box 359 (522 N. Iron St.)	Chehalis (Centralia)	Gen
MacMillan Sanatorium		Chehalis	TB
Morton Hospital		Morton	Gen
St. Helen's Hospital	1332 Washington Ave.	Chehalis	Gen
St. Luke's Infirmary	701 "H" St.	Centralia	Ment
MASON			
Clinic Hospital	428 Birch	Shelton	Gen
Shelton General Hospital	4th & Birch	Shelton	Gen
OKANOGAN			
Biles, J. C. Memorial Hospital (Memorial Hosp.) (Omak Hosp.)	18 1st W. & 1st S.	Omak	Gen
Brewster Hospital		Brewster	Gen
Coulee Dam Community Hospital	4th & Ickes	Coulee Dam	Gen
St. Martin's Hospital (Tonasket Hosp.)		Tonasket	Gen
PACIFIC			
New Riverview Hospital	824 Ocean	Raymond	Gen
Ocean Beach Hosp. (Ilwaco Gen. Hosp.)		Ilwaco	Gen
PEND OREILLE			
Ione Hospital		Ione	Gen
Newport Community Hospital	P. O. Box 607	Newport	Gen
PIERCE (Exclusive of Tacoma)			
Mountain View San. (Pierce Co. TB)		Lakeview	TB
Puyallup General Hospital	114 4th Ave. N.W.	Puyallup	Gen
Riverside Infirmary (Pierce Co. Inf.)	Elhi Rd., Box 33, Rt. 1	Sumner	Ment
Western State Hospital		Ft. Steilacoom	Ment
PIERCE (Tacoma only)			
Doctors' Hospital	744 Market St.	Tacoma	Gen
Northern Pacific Beneficial Ass'n Hosp.	801 E. Wright	Tacoma	Gen
Pierce County Hospital	3582 Pacific Ave.	Tacoma	Gen
St. Joseph's Hospital	19th & J. Sts. S.	Tacoma	Gen
Tacoma Gen. Hosp. (Paddock Mem. Hosp.)	315 K. St. S.	Tacoma	Gen
Washington Minor Hospital, Inc.	539 Medical Arts Bldg.	Tacoma	Surg
White Shield Home	5210 S. State St.	Tacoma	Mat
SKAGIT			
Anacortes Hospital	913 "N" Ave.	Anacortes	Gen
Matthews Gen. Hosp. (Burlington Gen. Hosp.)	1133 Fairhaven Ave.	Burlington	Gen
Memorial Hospital	State & Ball Ave.	Sedro Woolley	Gen
Northern State Hospital	Box 309	Sedro Woolley	Ment
Rowley General Hospital	711 E. Division	Mount Vernon	Gen
Skagit General Hospital Ass'n	6th & Division	Mount Vernon	Gen

County and Institution[1]	*Street Address*[2]	*City*[2]	*Type of Service*[3]
SNOHOMISH			
Aldercrest Sanatorium	R. F. D. No. 1	Snohomish	TB
Arlington General Hospital	Union St.	Arlington	Gen
General Hospital of Everett	1321 Colby Ave.	Everett	Gen
Providence General Hospital	Pacific & Nassau Sts.	Everett	Gen
Snohomish General Hospital	Maple St.	Snohomish	Gen
Valley View Hospital (Snohomish Co. Hosp.)	Co. Welfare Dept., Hodges Bldg.	Everett (Monroe)	Gen
SPOKANE			
Booth Memorial Hospital (Salvation Army Home and Hosp.)	W. 3422 Garland Ave.	Spokane	Mat
Deaconess Hospital	W. 733 4th St.	Spokane	Gen
Eastern State Hospital		Medical Lake	Ment
Edgecliff Sanatorium	R. F. D. No. 8	Spokane	TB
Paulsen Medical-Dental Hospital	W. 407 Riverside Ave.	Spokane	Surg
Sacred Heart Hospital	101 8th Ave.	Spokane	Gen
St. Luke's Hosp. (Shadle Mem. Hosp.)	N. 830 Summit Blvd.	Spokane	Gen
Shriner's Hosp. for Crippled Children	820 N. Summit Blvd.	Spokane	Orth
STEVENS			
Mt. Carmel Hospital and Annex	330 E. Astor	Colville	Gen
St. Joseph's Hospital	E. 501 Clay Ave.	Chewelah	Gen
Valley View Hosp. (Stevens Co. Inf.)	Co. Welfare Dept., Box 31	Colville	Gen
THURSTON			
St. Peter's Hospital	420 Sherman	Olympia	Gen
WALLA WALLA			
Blue Mountain Sanatorium	Route No. 1	Walla Walla	TB
St. Mary's Hospital	220 S. 5th & Poplar	Walla Walla	Gen
Walla Walla General Hospital	933 Bonsella St.	Walla Walla	Gen
WHATCOM			
St. Joseph's Hospital	250 N. State St.	Bellingham	Gen
St. Luke's General Hospital	1210 Jersey St.	Bellingham	Gen
Whatcom Co. Hosp. (N. Bellingham Hosp.)	Co. Welfare Dept., 1315 I. St. (N.W. Road)	Bellingham	Gen
WHITMAN			
Bryant & Weisman Hosp. and Clinic		Colfax	Gen
Finch Memorial Hospital	College Campus	Pullman	Gen
St. Ignatius Hospital	1009 S. Mill St.	Colfax	Gen
YAKIMA			
St. Elizabeth Hosp. & Children's Hosp.	S. 9th Ave.	Yakima	Gen
Valley Mem. Hosp. (Sunnyside Inf.)	11th & Tacoma	Sunnyside	Gen
Yakima Co. Hosp. (Yakima Co. Inf.)	Co. Welfare Dept., P. O. Box 167	Yakima	Gen
Yakima Hospital	912 West Yakima	Yakima	Gen
Yakima Valley Sanatorium (Dopps San.)	R. F. D. No. 1, Box 101	Yakima	TB

[1] Names in ( ) are former and/or alternate names.

[2] Addresses in ( ) give the location of the institution when different from the mailing address.

[3] Key to abbreviations used in this column: Gen—General Hosp.; Mat—Maternity Home or Hosp.; TB—Tuberculosis Hosp.; Ment—Mental Hosp. or related institution; Surg—Minor Surgery; Child—Children's Hosp.; and Orth—Orthopedic Hosp.

County and Institution	*Street Address*	*City*
ASOTIN		
Sullivan-Johnson Nursing Home	7th & Highland	Clarkston
CHELAN		
Buttles Nursing Home	629 Douglas	Wenatchee
Chelan County Infirmary		Wenatchee
CLALLAM		
Sequim General Hospital		Sequim
CLARK		
Cedar Lodge Nursing Home	Box 641	La Center
Evergreen Convalescent Home	Route 6, Box 496	Vancouver
Meadow Glade Convalescent Home	Route 2, Box 87	Battleground
Mountain View Sanitarium	3334 "L" St.	Vancouver
DOUGLAS		
Highline Sanitarium	Route 5	E. Wenatchee
GRAYS HARBOR		
Emerick Nursing Home	217 W. 3rd	Aberdeen
ISLAND		
Sandy Point Hospital		Langley
White Acres Rest Home	Route 1	Langley
JEFFERSON		
Ruby Nursing Home	Route 3	Port Townsend
KING		
Andrews Nursing Home	343 N. 104th	Seattle
Austin Nursing Home No. 1	9005 Roosevelt Way	Seattle
Austin Nursing Home No. 2	10509 Stone Ave.	Seattle
Burke Home	4903 Phinney	Seattle
Donaldson Convalescent Home	11039 17th N.E.	Seattle
Edmond's Nursing Home	12015 15th N.E.	Seattle
Frank Nursing Home	12232 Dayton Ave.	Seattle
Freedlander Sanitarium	934 31st Ave.	Seattle
Grace Sanitarium	10751 2nd N.W.	Seattle
Hillside Haven	412 29th Ave. So.	Seattle
Hooper Rest Home	1813 No. 90th	Seattle
King County Hospital No. 2	Georgetown	Seattle
Marsolais Nursing Home	Route 3, Box 232	Auburn
Meridian Sanitarium	3433 Meridian	Seattle
Rentona Nursing Home	516 Wells St.	Renton
Rest Haven Hospital	4009 E. Madison	Seattle
St. Vincent's Home for Aged	4831 35th S.W.	Seattle
University Convalescent Home	4757 12th N.E.	Seattle
Zenith Sanitarium	1704 17th Ave.	Seattle
LEWIS		
Grill's Nursing Home	408 S. King	Centralia
Lewis & Clark Sanitarium	1104 S. Gold	Centralia
Rock Creek Nursing Home		Pe Ell
Rosehaven Nursing Home	1827 Chehalis Ave.	Chehalis

Part II. CHRONIC DISEASE HOSPITALS AND RELATED INSTITUTIONS—Continued

County and Institution	*Street Address*	*City*
PACIFIC		
Taylor Nursing Home	2001 Harvard	Raymond
PIERCE		
Bellevue Sanitarium	515 S. 64th	Tacoma
Bernath Nursing Home	4632 S. "K" St.	Tacoma
Laboure Home	Route 7, Box 362 M	Tacoma
Ozanum Home for the Aged	1812 S. Yakima	Tacoma
Resthaven Home	409 S. "J" St.	Tacoma
SKAMANIA		
Bonneville Sanitarium		N. Bonneville
SNOHOMISH		
Bethany Home for Aged	3322 Broadway	Everett
Poole Nursing Home	223 S. Madison	Monroe
SPOKANE		
Armstrong Nursing Home	1323 W. 7th	Spokane
Cedar Hill Nursing Home	S. 526 Cedar	Spokane
Cliff Manor Convalescent Home	427 W. 7th	Spokane
Clifford Nursing Home	10122 10th E.	Spokane
Community Hospital, Inc.	E. 10410 9th Ave., R. No. 9	Spokane
Mallon Avenue Rest Home	1304 W. Mallon	Spokane
Moody Sanitarium	3135 N. Mayfair	Spokane
Nichols Nursing Home	4427 E. Euclid	Spokane
Park Hill Hospital	E. 29 7th Ave.	Spokane
O'Brien Sanitarium	518 S. Browne	Spokane
Riverside Sanitarium	2136 W. Riverside	Spokane
St. Joseph Home for Aged	E. 707 Mission	Spokane
Turner Memorial Home for Aged	1521 E. Illinois	Spokane
WALLA WALLA		
Davenport Nursing Home	432 E. Alder	Walla Walla
Parker Nursing Home	309 Boyer	Walla Walla
Walla Walla County Infirmary	Route 1, Box 268	Walla Walla
Williamson Nursing Home	1207 Pleasant	Walla Walla
WHATCOM		
O'Cain Nursing Home	1870 Knox Ave.	Bellingham
Restin Hospital	E. 1509 Victor	Bellingham
St. Francis Hospital	2315 Williams St.	Bellingham
WHITMAN		
Whitman County Infirmary		Colfax
YAKIMA		
Lofstrand Nursing Home	712 N. 2nd	Yakima
Pitts Nursing Home	208 N. 9th	Yakima
Terrace Heights Nursing Home	Route 1	Yakima
Walker's Nursing Home	816 Wright Ave.	Yakima